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ABSTRACT

In April 2000, over 250 rural leaders from around the nation gathered in Kansas City, Missouri, to discuss rural America's future, its challenges, and policies to meet those challenges. Conference participants agreed that the current pattern of uneven rural growth is likely to persist and that agriculture will remain a key sector in the rural economy, but not big enough to support growth in many parts of the nation. A strong consensus formed around the need to connect rural America to the digital economy and to raise the skills of workers and leaders to compete more effectively. This proceedings contains a conference summary by Mark Drabenstott, 10 conference papers with transcripts of subsequent discussion, and commentaries. The papers are: "The Rural Economy in a New Century" (Thomas G. Johnson); "Rural Policy in a New Century" (Ray Marshall); "Rural America at a Crossroad" (Terry Jorde); "The Outlook for Rural America in the 21st Century" (Alan Greenspan); "Investing in Rural Infrastructure" (William F. Fox and Sanela Porca); "Boosting Rural Human Capital" (Martin C. Jischke); "Enhancing Rural Leadership and Institutions" (Stephen Cornell); "Creating New Economic Opportunities: The Competitive Advantages of Rural America in the Next Century" (Andrew M. Isserman); "Rural Policy Lessons from OECD Countries" (Mario Pezzini); and "New Goals for New Rural Policies" (Geoffrey J. D. Hewings). An overview panel presents comments by Jill Long Thompson, Jesse White, Allen I. Olson, and Javier M. Gonzales. (Contains references in papers and contributor profiles.) (SV)

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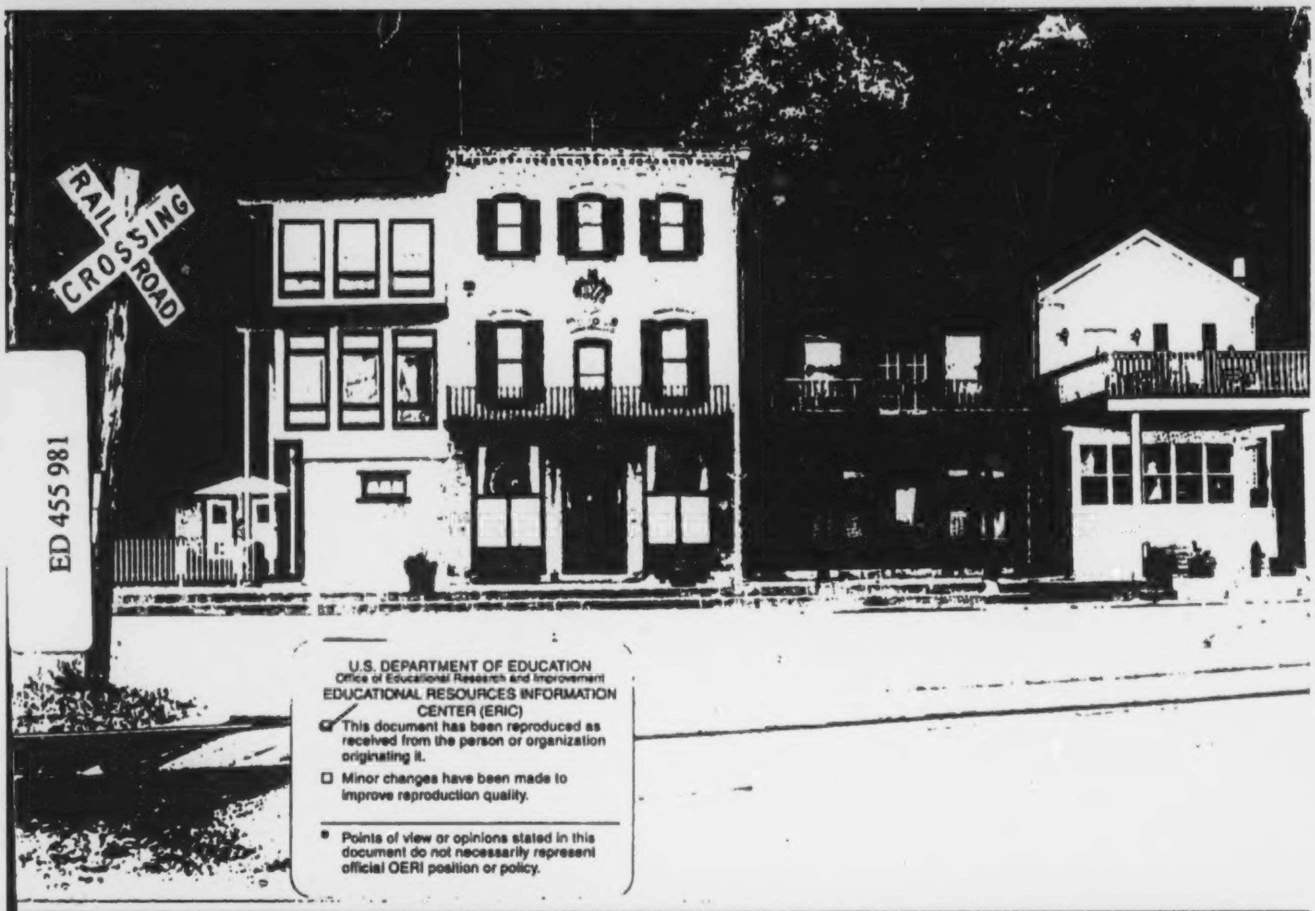

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BEYOND AGRICULTURE

New Policies for Rural America

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Beyond Agriculture: New Policies for Rural America

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The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.

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Preface

Rural America has always played a vital role in our country's economic strength. But today, as we continue to enjoy our longest economic expansion ever, we must acknowledge that not all of rural America has been able to take part in this unprecedented run of prosperity. It is becoming increasingly clear that many Main Streets across rural America must reset their sights. To prosper in the future, they must acquire new skills, new strengths, and new connections with an emerging digital economy.

Partnering with the Bank's Community Affairs Department, the Center for the Study of Rural America hosted its first national conference in April of this year. The conference sought to highlight the economic development issues that are becoming so crucial to the future of rural America. ***Beyond Agriculture: New Policies for Rural America*** explored the new challenges facing the rural economy and provided a forum for discussing the new policy directions needed to meet those challenges.

We trust the proceedings of this conference will contribute to a better understanding of the unique challenges facing rural America in the new century.

Thomas M. Hoenig

Thomas M. Hoenig
President and Chief Executive Officer
Federal Reserve Bank of Kansas City

October 2000

Beyond Agriculture: New Policies for Rural America — A Conference Summary

Mark Drabenstott

More than 250 rural leaders from throughout the nation and beyond gathered at a special conference in Kansas City in April to discuss rural America's future, its challenges, and policies to meet those challenges. *Beyond Agriculture: New Policies for Rural America* was the first in a new series of conferences sponsored by the Center on rural issues. Fifteen distinguished economists and rural experts made presentations at the conference, with keynote remarks by Federal Reserve Chairman Alan Greenspan. Conference participants represented all regions of rural America, five foreign nations, and many walks of life—business, agriculture, banking, universities, and public officials at the federal, state, and local levels.

Conference participants agreed that the current pattern of uneven rural growth is likely to persist, leaving many rural communities searching for new sources of growth. Another point of agreement was that agriculture will remain a key sector to the rural economy, but not big enough to assure strong growth in many parts of the nation. A strong consensus formed around the need to connect rural America to the digital economy, and to raise the skills of workers and leaders to compete more effectively. While there was no consensus on which new policy approach holds the greatest promise for rural America, there was general agreement that a new path is essential if rural America is to seize its full economic potential.

RURAL AMERICA AT A CROSSROAD

The conference began with an assessment of where the rural economy and rural policy are headed at the start of the new century. While there are pockets of strength in the rural economy, there are many areas of weakness, pointing to a series of policy challenges in helping rural America join the nation's prosperity. Meanwhile, rural policy is still largely focused on agriculture, leaving considerable scope for new policy initiatives aimed at broader rural economic challenges.

Tom Johnson suggested the rural economy is likely to remain a mix of weakness and strength for the foreseeable future. A third of all rural counties captured three-fourths of all rural economic gains in the 1990s. This concentration of economic activity is the result of powerful shifts in demographics, technology, and business practices. For example, rural areas that have gained economically tend to have amenities that attract more footloose people and businesses, and also have the infrastructure to support businesses more dependent on knowledge than natural resources.

Rural areas still tied to traditional rural industries, such as agriculture and forestry, face big challenges in the period ahead, according to Johnson. In a global economy, commodity industries will face stiff competition and thin profit margins. And while rural America has often based its development on relatively low labor costs, future opportunity will be based more on skilled workers and capital investment. This will tend to shift economic advantage to owners of capital rather than labor. Overall, these economic pressures will encourage continued structural change and hurt some existing businesses on Main Street. Thus, Johnson concluded, many communities will be searching for ways to encourage higher value products and knowledge-based industries, and policymakers will be looking for broader approaches to rural policy.

Ray Marshall suggested that rural policy, as currently constituted, will not meet all of rural America's challenges in the 21st century. Over time, U.S. rural policy has become a motley collection of many different policies, with no unifying mechanism, and leaning mainly on farm policy for its focus.

The challenges ahead require a fundamental rethinking of rural policy, Marshall argued. Two challenges will be especially important. Education and worker training will be essential in helping rural communities grow high performance, knowledge-based companies. The evidence shows that rural areas still lag behind in educational attainment and in worker training. Rural schools have special needs to raise their standards and become fully integrated into telecommunication networks. More broadly, telecommunication technology has the potential to overcome many rural economic disadvantages, but current market trends suggest many rural places may not have access to this technology in the future. There is mounting evidence that investments in new rural communication networks can spawn new economic development, northern Italy providing a good example. The real challenge, according to Marshall, is determining whether rural areas merit separate treatment in the regulatory approaches that will govern new investments in telecommunication infrastructure.

Marshall concluded that rural America is sufficiently unique to justify pursuing a new generation of rural policy. Such a policy is in the national interest, he suggested, due to the nation's interest in a prosperous, cohesive society, the preservation of the rural environment for people everywhere, and the fact that rural problems turn into urban ones and rural prosperity contributes to national prosperity. A new rural policy should not give inordinate attention to agriculture but should consider agriculture an important component of the rural and national economies. A rural policy should foster an environment that encourages the growth of "high performance companies," that is, companies that stress learning, productivity, and global competitiveness. Finally, rural policy should have safety nets to help rural businesses, including family farms, to survive changes in conditions over which people have little control.

Terry Jorde kicked off the general discussion in the first session by concurring that diversifying the rural economy and maintaining rural population will require more than farm policy alone, important as that will be. As debate on the next farm bill begins in earnest next year, Congress will need to begin including broader rural development policies into the legislative mix. However, a broader approach may be difficult since the jurisdiction over rural issues is divided. She suggested the real challenge in rural America is creating more wealth, and there is no ready formula to do that consistently. Community banks will play an essential role in spurring future development, serving as a catalyst both in bringing together and in launching new development visions.

LUNCHEON ADDRESS

In the keynote address, Federal Reserve Chairman Alan Greenspan pointed to technology as the driving force of the rural economy in the new century. Technology has certainly been a powerful force in the past century, pushing up productivity in agriculture, for instance, faster than in the rest of the economy. But waves of innovation and invention will continue, especially in the form of information technology. While it is difficult to predict the ultimate impact on rural America, Greenspan argued that the spreading wave of information technology will propel the process of "creative destruction." Technology will continue to replace old firms with new, reduce the costs of doing business, alter the mix of goods and services, and shift the location of economic activity. Central cities will likely exert a strong pull on economic activity in a digital economy, but Greenspan also suggested that the new technologies will enable some rural communities to capture new economic activities, such as e-commerce services. He concluded that the benefits of technological innovation—in urban and rural America alike—will more than outweigh the dislocations that may accompany its adoption.

SEIZING NEW OPPORTUNITIES IN RURAL AMERICA

The second conference session examined how rural America can seize new economic opportunities. Presenters concluded that three of rural America's critical economic resources—infrastructure, human capital, and leadership—generally lag behind the resources found elsewhere in the U.S. economy. Still, the wrap-up paper suggested that there are viable ways to build new economic engines for rural America.

Rural infrastructure contributes to rural economic growth, but by itself cannot guarantee growth. Bill Fox suggested that many infrastructure investments will be needed in rural America, but that such spending must be considered alongside other development strategies. Poorly maintained rural roads and inadequate Internet access are two clear examples of areas where additional investment will be needed. Fox suggested dollars would be best spent if a policy were designed around a few key principles. Decisions should, as often as possible, be made on an individual project basis. A "minimum complement" of infrastructure is needed throughout rural America, but that minimum should be redefined to recognize 21st century values and realities. In general, infrastructure should be built to meet known demands, not prospective ones. And it is generally cheaper to maintain infrastructure, such as roads, than it is to build new projects periodically.

Many speakers agreed that human capital, the skills of workers and managers, will be crucial to the rural economic outlook. Martin Jischke pointed out that rural America's human capital has been falling, mainly through the export of its young people to urban and suburban areas. While this trend is not new, new steps are needed to stem that tide if rural America is to tap more economic opportunities, especially since knowledge-based industries figure so prominently in the new economy. Jischke laid out four steps for boosting rural human capital: utilizing distance education to build the human capital of the existing work force; strengthening the rural education system to raise educational outcomes for rural youth; importing new human capital, perhaps through a 21st century equivalent of the Homestead Act; and creating a rural environment that will better attract and retain people with high human capital.

Assessments of rural leadership are difficult to obtain. Jorde and others, however, argued that the steady outflow of rural young people and skilled workers has left many rural communities with only limited leadership capacity. Stephen Cornell offered a useful parable to understand better the leadership challenges facing rural America.

Cornell suggested that extensive studies of economic development on American Indian reservations offer four helpful lessons for rural America more generally. Local control puts the development agenda in local hands and creates a much stronger link between decisions and their consequences. Local institutions also matter, since they send a message to potential investors. Strategic thinking helps direct efforts by providing a systematic examination not only of assets and opportunities but also of priorities and concerns. Finally, leadership plays a big role in economic development by precipitating action, interpreting events, and providing a conduit for information.

While efforts remain to bolster its resources, rural America has some distinct opportunities to seize. Andy Isserman highlighted two very different futures. In the first case, a significant portion of today's rural America will be "metropolitanized" in the years ahead. He pointed out that the fastest growing portion of the U.S. economy over the past three decades has been that part which is "formerly rural." That is, rural areas now next to the nation's metro areas, or ones growing fast enough to become a metro area in their own right, probably have very bright economic futures.

In the second case, rural America has many competitive advantages on which to build. Primary sectors, such as agriculture and forestry, will continue to prosper due to their technological edge, though likely with fewer, larger firms. A bountiful supply of scenic amenities will propel rural growth in many parts of the nation. Manufacturing seems likely to remain a powerful economic engine for much of rural America. Finally, telecommunications will put more goods and services at the fingertips of rural consumers, while perhaps underscoring the difficulties of operating rural businesses at a scale that can compete in the digital era.

NEW DIRECTIONS FOR RURAL POLICY

The final conference session explored new directions for rural policy, building on a new slate of goals and what can be learned from the rest of the world. Presenters concluded that aligning policy decisions with emerging "economic regions" would be an important first step, although the goals that will guide a new generation of rural policy remain somewhat elusive.

The challenges facing rural America are not unique—the same challenges are found in rural areas throughout the world. Mario Pezzini highlighted three shared challenges. Though agriculture and other natural resource industries are still important, they are producing fewer and fewer rural jobs. Rural areas suffer from the outmigration of both young and highly skilled workers, leaving an aging population and strained public services. And most rural areas have difficulty mustering the critical mass of capital and infrastructure to encourage and sustain new rural entrepreneurs. Recognizing these challenges, many countries are searching for local rural features that can spur new growth, such as scenic amenities, environmental virtues, or unique products that reflect the cultural heritage of a particular region.

While countries are responding in many different ways to these challenges, successful policies appear to have three common traits. First, rural policy shifts from a focus on individual sectors (such as farm policy) to one based on regions or territories. Territorial policy is becoming much more common in many OECD countries, as are steps to improve coordination of what sectoral policies remain.

Second, the administration and design of such policies devolve from national governments to the "new regions," which often cut across traditional political and administrative boundaries. That is, governments are recognizing that economic regions are more meaningful than traditional policy boundaries, and attempts are being made to align the two. Many countries are providing support for "bottom-up" development initiatives, for example, through the Canadian Community Futures Program and the EU LEADER program.

Third, there are new attempts to better coordinate policies affecting rural areas. At the federal level, this often involves creating new interministerial working groups (Canada has recently instituted such a group). At the local level, it often means forming new partnerships among various public departments and agencies as well as including the private and nonprofit sectors. Pezzini concluded that these policy innovations could be especially instructive to a new generation of rural policy in the United States, where farm policy has been the major focus in the past.

An important step toward any rural policy in the United States will be a careful consideration of new policy goals. Geoff Hewings put forward several possible goals, but concluded that the final selection will be difficult given the lack of debate on this topic in the past or currently. Improving rural infrastructure will be an important objective, but the benefits may be smaller than similar investments in metropolitan areas. Expanding agricultural opportunities will be important, through value-added processing and new specialized crops. Lifting rural human capital will be an essential ingredient in spurring new rural business formation. Finally, improving rural economic networks will be an important step in harnessing the potential of the small businesses that typify the rural economic landscape. Hewings concluded that there will not be one way to address the myriad problems in rural America. New approaches are needed, he argued, but any new rural policies must recognize at the outset that not all rural communities may be viable in the future.

CONCLUSIONS

An overview panel put conference findings into some final context. Under Secretary of Agriculture Jill Long Thompson suggested that undertaking new initiatives to spur rural economic growth will be critical in the period ahead, but helping farmers prosper in a changing agricultural economy will also be important. She underscored the need to help rural America connect with an increasingly digital economy. Jesse White concurred that innovative policy steps are needed to boost rural America's economic outlook. He noted that Appalachian Regional Commission initiatives show that infrastructure investments and a focus on indigenous business start-ups offer rural economic rewards over time. Al Olson urged for a rural policy that will promote and sustain diversification in the rural economy while also encouraging alternative uses for some cropland. One useful paradigm to consider may be the EU concept of "multifunctionality"—farmland that provides environmental, landscape, and rural viability benefits in addition to producing food and fiber. Javier Gonzalez underscored the role that local control and leadership will play in meeting rural America's challenges, but he pointed to a broader responsibility in bringing telecommunications to the countryside.

In the end, technology was the strongest theme of the conference. No one offered a formula for plugging rural communities into the digital age, but most agreed this is the biggest challenge facing rural America. Other recurring themes were the need to lift the skills of rural workers and leaders, and the need for rural policy to extend beyond a focus on agriculture alone. While there was no agreement on what the nation's rural policy should be, there was broad consensus that rural America will need new policies if it is to reach its full potential in the 21st century.

The Rural Economy in a New Century

Thomas G. Johnson

This paper discusses the economic status of rural America (and many other parts of the world) at the millennium. It focuses on the current status of rural areas and the incipient forces that will change life in rural areas through the early 21st century. It also explores the changing role of rural America within the larger U.S. economy.

What is meant by rural and urban? Throughout this paper I will refer to comparisons between metropolitan and nonmetropolitan counties and their equivalents. Metro (or urban) places have a core city with at least 50,000 residents and an area population of at least 100,000 residents in the most recent census. Nonmetro (rural) counties are all other counties. It is important to point out that this census-based definition of nonmetro includes some distinctly rural areas that happen to fall in the shadow of cities. It also means that many nonmetro residents live in small cities.

At the dawn of the 21st century rural America faces unprecedented change. But for at least the last half century many rural communities have been on a demographic and economic roller coaster.

Since at least 1950 the status and role of rural America within the larger economy were somewhat clearer (at least in retrospect) than they have been in the last quarter century. In general, urban areas produced products in the early stages of the product cycle, while rural areas generated raw materials, food and energy, and in some regions, provided low-cost labor for the production of goods in the mature stage of their product cycle. Rural communities depended on the income and employment generated by farms, farm policy, and farm families. Average farm size was increasing while farm numbers were declining. Excess labor from farm families joined the local or urban labor markets. Manufacturing firms located in least-cost locations (increasingly in the southern and western Sunbelt regions). The labor force followed jobs, which in turn followed inexpensive inputs, markets, and business climate.

As the traditional rural industries became more capital intensive, rural employment bases shrank and populations declined. But at least rural communities could count on the linkages between their agricultural, mining, and manufacturing sectors and their financial, trade, and service sectors. New economic activities, when they occurred, had significant and predictable multiplier effects on the rest of the local economy. Economic development strategies for rural areas, while often of limited success, were simple—support agriculture, forestry, and mining and attract manufacturing. These basic economic engines would then generate multiplier effects in the service sectors. They would also generate the tax base needed to run local government. The economic fortunes of individual rural communities, though not particularly good, were closer to that of the average community than they have been since.

Local government itself was relatively simple—collect taxes and provide a rather static array of public services. The more aggressive local governments were actively involved in industrial attraction.

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Then new forces began to influence rural areas. In the 1970s the population turnaround meant growth for many rural areas for the first time in many decades. The outflow of rural youth and the most employable members of the labor force declined but, more importantly, a significant number of people were choosing to migrate to rural areas—choosing a rural lifestyle.

The return to population decline in the 1980s seemed to mark the end of the population turnaround. In retrospect it now seems more likely that the 1980s were just a short setback in a fundamental change in settlement patterns in the U.S. So many fundamental forces affecting rural areas—deregulation, the dismantling of community safety net programs, the globalization of economic relationships, and technology—had changed such that the economies of rural areas were altered forever. There was also a fundamental transformation in the sectoral structure of rural areas. The basic economic rules were different than when the short-lived population turnaround began. Some communities used the experiences and resources gained during the 1970s to free themselves from the downward economic spiral. Other communities fell back into decline.

In the final decade of the 20th century, population growth returned to many rural communities in America. Yet the mixed experience of rural communities in the 1980s remains. Despite the fact that growth is occurring in rural communities in every region of the U.S., many rural communities continue to lose population. One-quarter of all rural communities continue to decline, and three-quarters of all nonmetro growth occurred in just one-third of nonmetro counties (USDA-ERS). Almost all the declining counties are in the plains region from North Dakota to Texas. Rural areas are increasingly attractive to new residents but not in all regions. Most growth is in areas adjacent to the larger cities while peripheral areas continue to decline.

The following map, prepared by USDA-ERS, shows the dispersed nature of rural growth. Notice that almost all the declining counties are in the plains region from North Dakota to Texas.

THE CHANGING RURAL ECONOMY

Obviously, one cannot understand the changes occurring in rural communities without understanding the changes, mostly global, occurring in the broader economy. Several forces have combined and are leading to significant changes in rural life in the U.S. and throughout the world. These forces include changing technology, globalization, and localization.

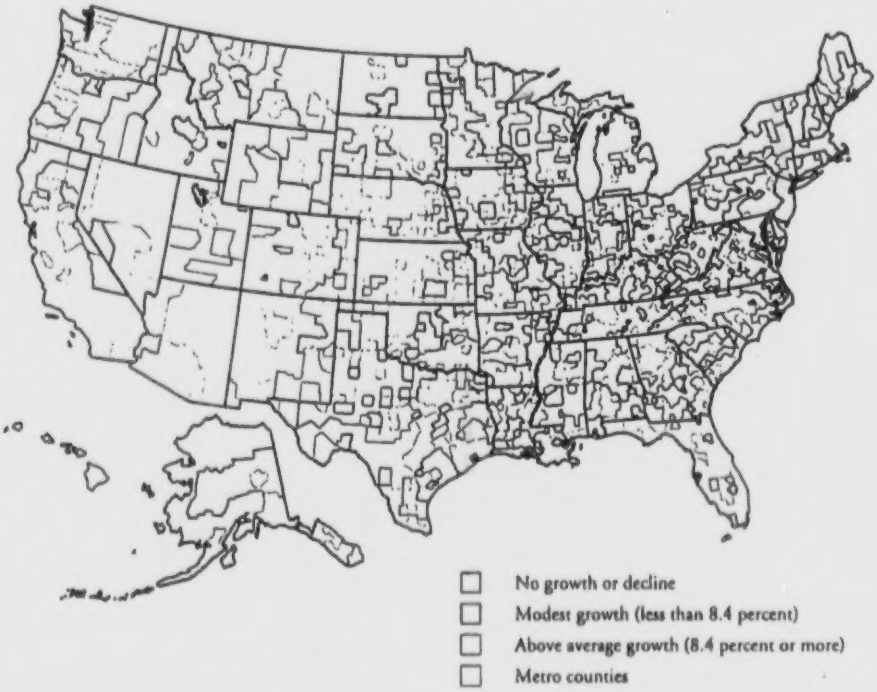
Technological change

Technological change is so ubiquitous that it heads most lists of change. Technological change is nothing new to economies dependent on agriculture, mining, forestry, or manufacturing. No sector has been affected more fundamentally by technological change than agriculture.

From the rural community's perspective, technological change affects more than just employment patterns. In production, the most significant economic forces are the rising importance of information, communication, robotics, artificial intelligence, genetic engineering, and other embodiments of technology. In addition to the direct effects of technology on employment, it has led to increased use of services (particularly information-related services) and reduced use of goods (particularly raw materials) in the production processes of other manufacturers.

The productivity of labor in most goods producing industries has risen dramatically—approximately fourfold, or 300 percent in the last 40 years. The productivity of labor in services, on the other

Figure 1
NONMETRO POPULATION CHANGE, 1990-98


☐ No growth or decline
☐ Modest growth (less than 8.4 percent)
☐ Above average growth (8.4 percent or more)
☐ Metro counties

Prepared by the Economic Research Service, USDA
Source: Bureau of the Census

hand, has increased considerably less—about 25 percent. These increases have been accomplished by combining increasingly greater amounts of capital with each unit of labor. Since the demands for many goods have risen only modestly, the growth of employment in these industries has been relatively meager. Some of this new capital has been introduced to take advantage of the emerging technologies discussed above, while other capital has been substituted for high-cost labor. It is important to note that as this trend progresses, the cost of labor becomes less and less important in location and investment decisions because it makes up a declining portion of total costs. This process, then, can have positive effects on income, job security, etc., even while it reduces employment.

As a consequence of technological change, goods production and employment have become decoupled. Production has increased while employment has decreased. Intersectoral linkages have replaced intrasectoral linkages. In addition, the product cycle has been broken, at least from the perspective of domestic rural economies. Rural areas are losing some of their comparative advantage in standardized goods (commodity) producing industries that use labor extensively.

Technological change also affects the relationship that people share with each other, with their communities, and with their governments. People are more mobile, more flexible in their choices of employment and residence, and have greater access to information. Information and communication technology (ICT), especially, has changed the nature of distance. Distance has been made less important by technology but that same technology has increased the importance of being connected and connected to the right places. As Malecki points out,

> For people in local places, it is important perhaps crucial to have links to the global networks of large firms where information, commerce, and decisions are centered. Links to global networks no longer require proximity, but they do require having links and using them to obtain and exchange information. The "links" are those of individuals' personal networks and the business networks of highly competitive firms with their suppliers, customers, and other sources of knowledge. The cost of being unconnected or remote is a higher cost of operation, usually in the form of a time penalty.

The linkage between productive activity and distribution of income has changed. The substitution of capital for labor affects the functional distribution of income by shifting returns from the owners of human capital to the owners of physical capital. Between 1959 and 1999 wages and salaries declined as a percent of personal income from 66 percent to 57 percent. At the same time dividends, rent, and interest increased from 13 percent to 19 percent of personal income (Chart 1).

In the case of agriculture this capitalization has resulted in larger farms, shrinking farm population, and declining labor income. However, these changes are not nearly as dramatic as those occurring in some mining, forestry, and manufacturing dependent communities. Unlike agriculture, where the owners of the physical capital are much like the owners of the human capital and labor that they are displacing, the owners of physical capital in mining, forestry, and related manufacturing industries are very different from the displaced labor. In addition, the so-called "Wal-Mart effect," in which independent, locally owned retail businesses and service establishments are replaced by large, often international, chain stores, is changing the ownership of physical capital as well.

These new owners of rural physical capital are frequently very affluent, and usually not residents of the community in which their investments are made. They tend to spend their income outside the community and lead to lower employment and income multipliers in the community (Bernat). The income tends to be distributed more unevenly (Bernat) and be more variable in these communities.

Globalization

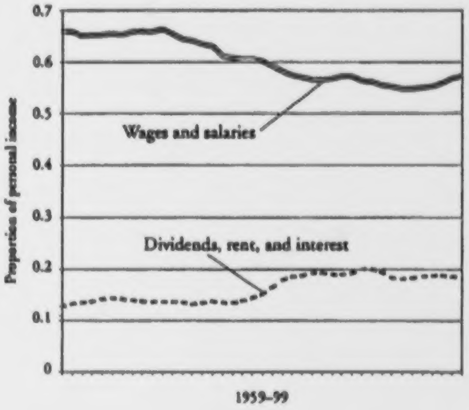
The "globalization" of the economy is so frequently cited as an important economic force that it has become cliché. Increased trade and global competition among firms are usually the assumed consequence of this globalization. Of greater significance to communities, however, is the movement of information, technology, capital, and people. In addition to the competition in markets for goods and services, then, is the heightened competition among communities around the world for jobs, residents, and finances.

As Malecki and others have pointed out, globalization and technological change, especially the changes in information and communication technology (ICT), are closely related forces. ICT has allowed firms to decentralize in a spatial sense while centralizing in an information sense. Firms in many industries, especially producer and consumer services, have distributed activities worldwide and overcome distance with ICT.

In the retailing sector, Wal-Mart uses a leased satellite transponder to link its 1,700 stores to its Bentonville, Arkansas, headquarters and 14 distri-

Chart 1

WAGES AND SALARIES VERSUS DIVIDENDS, RENT AND INTEREST AS PROPORTIONS OF PERSONAL INCOME, U.S. 1959–99



Source: BEA

bution centers, in order to track every item sold at each checkout and to play the same background music in each store (Malecki).

Firms also use ICT to link with each other in order to coordinate and to achieve logistical advantages. I am told that Gateway Computers has extended the concept to the point that UPS now essentially assembles computer systems in their warehouses. Gateway directs components from its various sources directly to UPS, which packages and delivers systems to Gateway's customers.

Distance has been made less important by technology but that technology has increased the importance of being connected and connected to the right places. As Malecki points out,

> For people in local places, it is important perhaps crucial to have links to the global networks of large firms where information, commerce, and decisions are centered. Links to global networks no longer require proximity, but they do require having links and using them to obtain and exchange information. The "links" are those of individuals' personal networks and the business networks of highly competitive firms with their suppliers, customers, and other sources of knowledge. The cost of being unconnected or remote is a higher cost of operation, usually in the form of a time penalty.

Globalization has left many rural communities unsure of their best strategies. Very different spatial features attract employers than in the past. Traditional industrialization incentive programs are very risky and, when successful, attract employers of a type that can as easily be lured away again by another community with an attractive incentive offer.

Localization

Localization is the growing role of local conditions and local choices to determine the prosperity of a community. The reasons for the growing primacy of local circumstances include technological change, changing social and political attitudes, increasing returns to scale in many industries and, ironically, the globalization that has opened competition with the world. Reich, in *The Work of Nations,* describes how global competition means that we as a nation are no longer in the same boat. The prosperity of our community depends on whether we are competing with the rest of the world as routine producers, or whether our economy is based on the work of symbolic analysts. Rural communities then depend on how well their economic base sector fares.

As we saw above, in the discussion of globalization, there is a growing freedom of all industries, but most strikingly of services, to behave like footloose industries and to decentralize different functions spatially. The declining role of goods, especially raw materials, in production, and the practice of what has provided both traditionally factor-oriented and market-oriented industries with a wider array of potential locations. Many factor-oriented manufacturing industries choose to transport their raw materials to areas where there they are closer to their markets, where amenities are higher, or where factors other than raw products are lower cost. On the other hand, the growing role of information exchanges, ICT, and computers, allows many services and otherwise market-oriented industries to locate at a distance from their markets. Newspapers need no longer be local. National newspapers exploit economies of size without compromising quality. Satellite and fiber optics technologies allow instantaneous audio, video, and information transmissions over long distances. This allows financial, insurance, real estate, educational, business management, accounting, legal, and many other services to centralize some functions and decentralize others but, in general, free them from locating strictly according to the location of their clients. Indeed, many of these services can be, and are being, provided in international markets just as goods have always been. Retailing will become increasingly footloose as consumer acceptance of mail order and e-commerce rises. New service industries, yet unimagined, will undoubtedly arise to take advantage of the new technologies.

Overall, we observe an emerging economy in which the definitions of economic base, services, public and private enterprise, competition, and even sectors themselves have become blurred. We see an economy in which trusted linkages—linkages between production growth and employment growth, between base and nonbase industries, between activity and place—have been severed. We see an economy in which linkages have become more numerous but more decentralized, and where distance becomes a resource rather than a cost or constraint.

Rural areas face potential disadvantages when compared to the localization forces of urban areas. Perhaps the greatest disadvantage is lower population density. Low density increases the cost of infrastructure, reduces the size and complexity of the labor market, and reduces the size of markets. In a world of significant economies of scale in many sectors, low population density is a decided disadvantage. In addition, low density means that rural areas will always be last to receive the benefits of technological change.

An oft-cited disadvantage is distance from population centers. But as Krugman (1999) and others have shown, transportation costs related to distance can be a centrifugal force. Ironically, technology is tending to erode the decentralizing effects of transportation costs. An obvious example of this is the centralizing effects of e-commerce.

Industrial structure

The structure of all industries and the relationships between firms are changing everywhere. In rural areas a fundamental restructuring is under way. The emergence of industrialized agriculture, farmer alliances, new generation coops, and other elements of supply chains, is precipitated by changes in technology, growing globalization, and the existence of economies of size. The supply chain revolution in agriculture is having a wrenching effect on rural communities as well (Drabenstott). For one thing, the spatial concentration of agricultural products and firms is growing. This affects the stability of these emerging "commodity communities" and increases their dependency on particular firms (Drabenstott).

CHANGING DEMOGRAPHICS

Migration to rural communities

As pointed out in the introduction, many rural communities, especially those in the mountain and in East Coast states, are experiencing significant inflows of new residents. This internal migration consists primarily of older adults who are, or who expect to be retired, and of telecommuters or business people no longer tied to particular locations. An important dimension of this internal migration is the rising demand for amenities. McGranahan identified six climatic and topographic rural amenities. The amenities were used to generate an index (Figure 2). Using statistical methods McGranahan found that the index explains at least one-quarter of the variance in rural growth rates.

This resurgence of some rural communities obviously brings new investment and income to selected communities. Migrants often bring entrepreneurial talents, experience, market knowledge, and capital to their new communities. Return migrants (natives to the community who had left to pursue employment opportunities) combine these characteristics with an understanding of their new communities.

But population increases in smaller, rural communities not accustomed to new residents can also lead to economic and social conflict between the "fromheres" and the "come-heres." In addition, inmigration puts significant new demands on private and public services and can lead to rapid increases in prices for housing and other real property.

The rural areas of the Great Plains continue to lose population. But even here there are exceptions in small cities and in recreational and tourism areas that lack the amenities and locational characteristics that support a population increase.

Settlement patterns

In addition to the more macro phenomenon of growing rural populations, communities are being changed by a trend toward more dispersed settlement patterns. Increasingly, people are interested in fleeing the congestion and high cost of suburban life for the quieter, safer, and more affordable surroundings of the metropolitan fringe. This is a continuation and acceleration of urban sprawl into the suburbs and rural areas.

In many places, small jurisdictions lack the planning resources and the physical infrastructure to respond to this kind of growth. Growth then exacerbates existing fiscal constraints for local governments and, in some cases, contributes to problems with water quality and other key natural resources.

Aging of the population

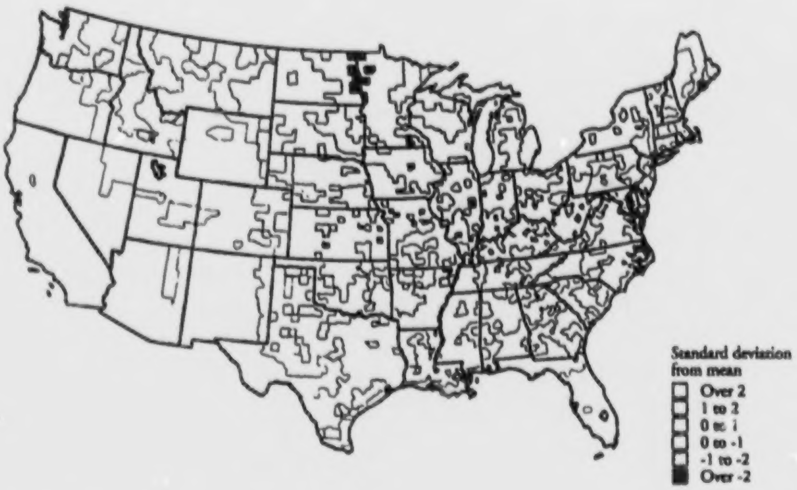
As the baby-boom generation begins to turn 50, and as life expectancy continues to rise, the overall population is becoming older. The elderly, especially the baby boomers, tend to be quite mobile and as we have seen are increasingly choosing nonmetropolitan communities as their retirement destination. Since the poorer elderly may not migrate as readily as the wealthier, declining communities may experience rising poverty and increased demands for social services. Growing rural communities will face increased demands for other public services and amenities. As residents in rural communities age, more people will receive direct and indirect income from federal transfer payments (pensions, Medicare, etc.).

NEW GOVERNANCE

Devolution

Throughout the world, communities are faced with the prospect of making more decisions of greater import than ever before. For rural communities, this is often a tall order given their small staffs and resources and their limited experience with many of the new areas of responsibility. Each area of responsibility creates its own problems. In the area of economic development, communities, often neighboring communities, find themselves pitted

Figure 2
RURAL AMENITY INDEX SCORES BY COUNTY



Source: McGranahan 1999

against each other in the competition for migrating employers.

The term, devolution, has become a commonly used term to describe the changing relationship between central and local governments. In recent years the Scots, Welsh, and Irish have all opted for their own legislative assemblies—a concept referred to as devolution by the British government. In Europe, the concept of subsidiarity means that responsibility for public issues is assumed to be the role of the lowest possible level of government. In the U.S. devolution refers to the process of shifting policy responsibility from the federal government to state and local governments.

New governance is a larger trend than just devolution, however. It includes a fundamental rethinking of how policy decisions are made and how public services are delivered. The European Union has adopted a policy called the Civic Society in which the democratic process is being broadened. The concept of Civic Society goes beyond formal government to that of informal governance.

Reinventing government

All levels of government, in many parts of the world, are transforming in the face of changing technology, economics, and global realities. Market oriented, entrepreneurial, competitive and results-oriented—these are some of the descriptors that Osborne and Gaebler use to describe the effective government of the future in their book on reinventing government. Reinvented governments are balancing their budgets and overhauling taxes. They are financing themselves with user fees and other market mechanisms. They are privatizing, outsourcing,[1] and forming strategic alliances with other governments and with the private sector.[2] They are becoming performance-based.

Performance-based government is designed to target limited public resources for maximum impact, to provide incentives for government units to improve the delivery of public services, and to hold government more accountable to specific measurable objectives. This trend is seen in a variety of policy contexts. At the community level, states such as Oregon and Minnesota have initiated the development of key performance indicators and specific short- and long-term quantitative targets for each of these measures, identified through a grass-roots process at the local level. Performance against these targets will, in part, determine local government assistance from state funds.

This trend places even more importance on the capacity of rural communities to manage information and develop strategies to interact with that information in ways that help them achieve measurable improvements in the delivery of public services.

Decentralization of decision making

The most fundamental aspect of new governance is the tendency toward greater decentralization in the decision-making process itself. Throughout the world, community residents are demanding more direct influence over the decisions affecting their communities. Information technology and communication infrastructure tend to support this decentralization process by reducing the transaction costs involved in becoming informed. They also facilitate the process of achieving agreement by reducing the transaction costs involved in communication.

Thus far, U.S. policies with regard to information and communication technology (ICT) in rural communities have focused on the supply side. That is, a key objective is to assure some minimal level of access to telecommunications infrastructure to residents of all places—great and small. Addressing demand-side issues is of equal or greater importance. Europe, through its Information Society policy, focuses more on the demand side by developing in the ultimate users of ICT the capacity and desire to use information technologies.

RURAL AMERICA: IRONIES AND PARADOXES

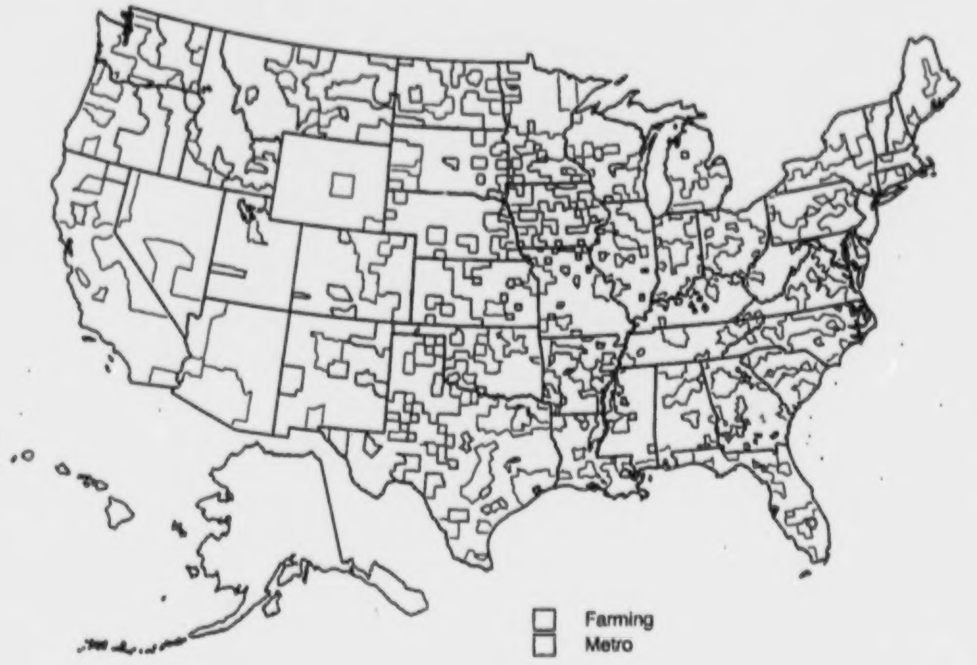
Farms are more dependent on rural communities than rural communities are on farms

Nationwide, farm income represents less than 2 percent of total income. Most studies of the contribution of farming to state and local economies find that even including farm input suppliers, agricultural value-added processing, distribution of food and fiber, and the multiplier effects of income earned in all of these activities, agriculture contributes less than 20 percent to the gross domestic product of their state. Much of this contribution by agriculture actually occurs in urban, not rural, communities.

Even the most farming-dependent communities depend on agriculture for a fraction of their income. Figure 3 is a map of the 556 USDA-defined farming-dependent counties in 1989. Farming dependent counties are defined as those where at least 20 percent of total labor and proprietor income comes from farming. Given strong growth in nonfarm income and very weak growth in farm income over the last decade, this number is likely to be smaller today. Even with the multiplier effects of farm income, the contribution of farming to all but a few communities is likely to be considerably less than 50 percent.

On the other hand, in 1997 the average census farm family had net earnings of just under $6,000

Figure 3
NONMETRO FARMING DEPENDENT COUNTIES, 1989*



*Counties with 20 percent or more labor and proprietors' income from farming, 1987-89 annualized average
Source: Rural Economy Division, Economic Research Service, USDA, using data from the Bureau of Economic Analysis

from all farming activities (down from almost $8,000 the year before). In the same year the average farm family earned over $46,000 from off-farm sources for a total of over $52,000. Thus, the average farm family depended on off-farm jobs, dividends, interest, and transfers for over 88 percent of its income. On average 54 percent of this income came from off-farm jobs in their communities.

Overall, it is quite clear that farms are more dependent on their communities than communities are dependent on farms. Farms and farm families depend on their communities to provide them with public and private services, roads and marketing opportunities, good education, etc. Farm families also depend on their communities to provide off-farm employment for the operator and for family members. Because of the physical tie of farm families to the location of their farms, farm families are particularly sensitive to the location of these nonfarm jobs—they cannot relocate to improve their access to employment opportunities without also giving up their farms.

Nonfarm rural residents are often in conflict with farms and agricultural policy

In general, rural communities benefit when their local agriculture sectors prosper. Most nonfarm residents have an interest in the health of the agricultural sector. However, structural changes in agriculture seem to be eroding some of these common interests. Increased industrialization of agriculture seems to be weakening the ties between farms and their communities. Allen et al. found that concerns with industrial agriculture and meat packing plants were greater among rural residents who lived in smaller towns or who lived closer to these farms and plants than those more distant from the farms and plants. Other anecdotal evidence indicates growing feelings of mistrust, more serious land-use conflicts, and increasing environmental conflicts between farm and nonfarm rural residents. Rural residents don't seem to think of the new larger farms as community residents. Furthermore, in many states and communities agriculture has effectively limited its exposure to local property taxes, further reducing the interest that nonfarm residents have in the sector.

What concerns do nonfarm rural residents have about agricultural policy? Rural residents, other than farm families and those closely tied to the farm economy, seem to have many of the same concerns with agricultural policy as the general public—food safety, food prices, environmental issues, and federal fiscal effects of farm policy. Ironically, rural residents have additional interests that may mean that they have more conflicts with farms than do urban residents. For example, rural residents have concerns about local environmental effects—odors, threats to water quality, noise, and truck traffic. In addition, rural residents are often concerned about tax limitations and the impact of inmigration to fill low-wage agricultural value-added jobs.

Agricultural policy is not rural policy

If the economies of rural communities are not particularly dependent on farms, is it possible that agricultural policy can serve as our rural policy? Federal expenditures on agriculture (approximately $10 billion in 1999) are important stimulants to rural economies. The stabilizing and reassuring effects of agricultural policy are also possible. But other federal agencies, notably the Department of Transportation, Department of Education, Social Security, Health and Human Services, Housing and Urban Development, Small Business Administration (SBA), and Department of Commerce (EDA) contribute significantly to rural economies as well. USDA estimates that almost $6 billion of DOT expenditures and $6.6 billion of HUD expenditures benefit rural areas directly. Social Security, Medicare, and Medicaid are huge sources of income in many rural communities. Furthermore, many of these expenditures tend to have indirect impacts on quality of life in rural areas and the well-being of a broad array of rural residents.

Small businesses in large places and large businesses in small places

The increasing economic returns believed to exist in so many industries lead to a potential paradox. The imperative of scale is leading to larger and larger firms and more complex agglomerations of businesses. In urban areas small to medium firms can cluster to capture the benefits of agglomeration economies—savings due to proximity to a diverse labor force, specialized producer services, and high-quality public services. In rural areas, economies of scale are more likely to be achieved internally to firms. Firms must become, and increasingly are becoming, larger and larger. In agriculture the emergence of supply chains is evidence of this trend. In other sectors the location of large wholesale facilities, assembly plants, waste facilities, and prisons are examples of large, self-contained enterprises. The consequences of this trend are that rural areas will increasingly depend on the fortunes (and whims) of one or a few firms.

WHERE ARE WE HEADED?

It is one thing to chronicle the current situation and speculate on the underlying trends. It is quite another matter to predict where these trends are taking us. However, in this section I assume that major policies remain unchanged and that current trends continue for another generation. Under these conditions how will rural America look in the next decade or so?

First, the economic conditions of rural America will continue to diverge—the range between the least and most successful will continue to widen. Overall, population and income growth rates in rural America will equal or exceed those in urban America. Metropolitan statistical areas will expand in each of the decennial censuses incorporating some of the highest income and rapidly growing nonmetropolitan counties, officially leaving the remaining rural areas poorer and slower growing.

While there will be many types of experiences in rural America, two extremes will stand out—the growing, connected rural community, and the isolated rural community.

The connected rural community

Connected rural communities will have high levels of natural and man-made amenities. Because of higher than average income, education, and population growth, each new generation of telecommunication infrastructure will be provided at an early stage, encouraging private investment and growth. Most of these communities will have good commercial air service, health service, and high-quality public education.

A majority of the farms within the labor-sheds and retail areas of connected rural communities will be relatively small, many operated by part-time and hobby farmers. Some farms will produce high-valued products targeted at local niche markets—horticultural crops, U-pick farms, etc. Industrial agriculture will have largely exited these communities in search of lower land costs and fewer land-use conflicts. Land values will be too high, and the transactions costs of developing a viable business in these areas have become prohibitive for low-valued, high-volume production.

Connected rural communities will face what they have come to consider serious land-use issues. In many cases the rural character of the local towns has been displaced by more suburban characteristics. Traffic will overwhelm the local roads, much of the rural "farmscape" will have been replaced by large-lot residential development, campus-style industrial and commercial development, and strip malls.

In short, the connected rural community will become less and less rural and more and more suburban.

The isolated rural community

Isolated rural communities will generally exist at considerable distance from urban centers. These communities will be those that have survived a period of significant rural consolidation—i.e., the decline of some and stabilization of others. Most of these communities will be in the Upper Plains and western regions, although pockets of isolation will exist in all regions. Population will be stable or declining. Income levels will be significantly lower and income growth will lag behind the national average. These communities will have telecommunication infrastructure but it will typically be at least one generation behind that of urban and growing rural areas, and it will be more expensive. Nowhere will the digital divide be more striking than in the isolated rural community.

Farms will be large and technologically cutting-edge. These regions will be the home to a majority of the largest Confined Animal Feeding Operations (CAFOs). Some states and some counties will have found legislative or regulatory means of limiting industrial agriculture. (In most cases, the economies in these states and counties will be struggling even more than in those that admit industrial agriculture).

Residents have few local entertainment and retail alternatives. Those that can afford to be connected depend on the Internet for entertainment, shopping, investing, and education. Farms and manufacturers are almost totally dependent on the Internet for marketing, sales, and purchases of inputs.

Local public services, especially education, will be minimal. Both the property and retail sales tax bases will have dropped significantly since the turn of the century, leaving many rural counties and school districts without adequate financing.

These communities will rival inner cities as the primary destination of international immigrants. These immigrants will largely work at close to minimum wages for value-added agriculture processing or other manufacturing firms.

CONCLUSIONS

Rural America is at a crossroads. During the 20th century, technology eroded the employment base of most rural communities, depressed incomes, and made outmigration the only recourse for millions. In the 21st century technology may reverse that bias and instead favor rural communities and rural residents. Rural communities face a number of hurdles before these forces will work to their advantage rather than disadvantage.

The fortunes of rural communities are diverging. Some are continuing to face traditional economic hardships and decline. Others are trying to cope with rapid growth in jobs and population, land use conflicts, growing demand for public services. With a continuation of current policies, there is little reason to expect this process of divergence to ease.

On the other hand, economic and technological trends are reducing the cost of distance and increasing the value of space. Technology is reducing the need for labor, especially proximate labor. Demand for the kind of life-style available in rural communities is growing. There are reasons to be cautiously optimistic. There are certainly reasons to explore the potential for business growth, and to search for new engines of rural growth. With new, effective rural policy, rural communities can contribute much more to the vitality of the national economy.

ENDNOTES

[1] Outsourcing refers to the practice of going outside the firm for services that were traditionally provided internally.

[2] Strategic alliances refer to the practice of co-venturing and contracting vertically with suppliers and clients, and horizontally with competitors.

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The Rural Economy in a New Century: Discussion

Moderator: Alan Barkema

Mr. Barkema: Tom, thank you very much for those thoughtful insights. Ladies and gentlemen, we've now come to an important part of this morning's program—that is, your opportunity for a dialogue and probing questions for Tom. As we begin that process, I want to introduce to you two more of my Center colleagues: Kendall McDaniel and Brian Staihr. Both Kendall and Brian are carrying portable microphones, and they would be delighted to bring a microphone to you so that you can ask your questions. As you ask your question, I would ask that you first state your name and affiliation.

So, ladies and gentlemen, who has the first question for Tom this morning? Yes ma'am.

Flo Raitano, *Executive Director Colorado Rural Development Council:* My question for you is, a couple of weeks ago I had the distinct pleasure of serving on a panel in front of a number of economics students at Colorado State University. One young student came up to me at the conclusion of the remarks and said to me, "So, tell me why rural matters. Wealth is generated in cities." What's a response to that student?

Mr. Johnson: Well, a number of possible responses to that. Obviously, if you look at the map, a large majority of our area is represented under the influence of rural communities and rural people. Not only that, but a large proportion of our population. Rural America can either be a strong contributor to the growth and prosperity of this nation, or it can drag this nation down. And, I think that's just one of the more obvious examples.

Not only that, though. Rural America is the custodian of a great deal of our heritage, our cultural, and historical resources. It is the part of this country that most of our urban population gains a great deal of value and utility from just knowing that it is there and having it available to drive through and to experience. We are not and should not be a nation of rural versus urban. We should be a nation of people who share in each others' prosperities and problems.

Bill McQuillan, *City National Bank, Greeley, Nebraska:* I'm glad that this presentation is being put together and I welcome your thoughts. I was hoping that you would be a little more optimistic in your presentation. There's a lot of us that think, I believe, that a lot of the urban centers take rural America for granted. Your comments were well taken.

I tend to believe that there are opportunities here and I think the presentation, I hope, gets into it, and I think it revolves around information technology. I think it is our first opportunity in many, many years to have these opportunities. I was wondering if you can comment on how you believe this broader spectrum of bandwidth can be delivered to rural America. In my community, I've created a note, unfortunately it's probably at least two years behind, in trying to create the speed and the bandwidth that we need to get our businesses brought up to speed to be able to survive. It just isn't there now, and nobody wants to come there to increase the speed right now. Could you comment on that?

Mr. Johnson: I'm afraid I am quite pessimistic about many of those things. It isn't a matter of whether rural America will have access to information technology, because it will. But, so long as we need to generate enough volume early in the process to make new generations of information technology viable and economically feasible, they will always occur in the cities along the interstate corridors before they make their way into rural America. We are here in Kansas City, the home of Sprint PCS. We have very good PCS service. But, you have to stay in the cities or on the interstates. Once you get off there, the digital service no longer exists. It will be there some day, but it will be two generations late, or a generation late. There's not an incentive to make private sector investments in places that will always be two years or one generation behind in technology.

The solution has to be some kind of nonmarket or partnership between the public and private sectors to see that at least parts of rural America can enjoy an infrastructure and the benefits of that infrastructure at the same time as do the urban areas.

Betsey Kuhn, *Economic Research Service:* Tom, you ended on kind of a tantalizing note, saying with effective policies we could see a rural renaissance. I wanted to just ask you follow up a little bit on some of your ideas for effective policies.

Mr. Johnson: That's the role of our subsequent speakers. But I will say why I think that it is possible. There's a growing demand, as I said, for the very amenities and qualities of life that exist or potentially exist in much of rural America. The pieces of the puzzle are not there. If we can put more of the pieces together, there are many reasons to be optimistic. People want to stay in rural communities. The people who grew up there, many of them do want to stay in rural communities, if given the opportunity. We have the information communication technology that can erase the disadvantages of isolation if we find ways to put those in place. We can put those pieces of the puzzle together if we choose. Today, I don't think we have anywhere close to the kinds of policies necessary to make that happen, though.

Don Macke, *Rural Policy Research Institute:* What kind of lessons might we derive from the European Union as we try to move rural policy in the United States outside of the shadow of rural policy?

Mr. Johnson: The European situation is very interesting. I would never suggest that we emulate Europe. The American experience will be and must be different. But, there are some lessons that we can learn from Europe. For one, Europeans have a level of appreciation and reverence for rural areas and for heritage and for some of the cultural aspects that we have in our rural areas, at a level that they are willing to pay for it—to find ways to preserve those things that they consider valuable. Of course, they've always had a history of being more concerned with place and space than we have in this country. We have a very frontier mentality and always have. We don't have room for a frontier mentality anymore. Those are the kinds of lessons that I would learn. I would learn some of the ways that they have found to protect the space and place resources in their case, in an American way.

Fritz Ruf, *Wisconsin Housing Authority:* Are you suggesting that our investment in infrastructure be in wire rather than in asphalt and sewer and water?

Mr. Johnson: No. For one thing, I think there is probably a wireless solution to the rural connectedness issue. But, I don't think that was the meaning of your question. I think you are asking, "Should we be investing in information technology as opposed to traditional infrastructure?"

I think we do need to reevaluate our investment priorities. I think that you cannot rely strictly on information connectedness, however. People need to be physically connected with the rest of the country. That means some roads; it means airports. I think airports will not become less important in an information age, but probably more important because people will then choose to be at a distance from their colleagues and their business associates so that they then absolutely need a fast way to get face-to-face. I recently read something that impressed me. Information technology is a good way to communicate in very standard, typical kinds of transactions. But, atypical—the introductory kinds of transactions between people—almost necessarily have to be face-to-face. So, we also have to think about the physical connectedness.

Stan O'Brien, *Cessna Aircraft Co.:* If we can effectively and economically move people and product in and out of rural communities, what would that do for the stabilization of those rural communities?

Mr. Johnson: The issue of transportation is an interesting one. It is sometimes said that you build a highway to a rural area to make it easier for people to leave. And, it turns out that there is some economic basis for that. As long as there are a lot of industries subject to increasing returns or economies of size, transportation costs actually disburse activity, make it difficult for everything to be located all in one place. So, it's possible that if you make it too easy to move goods and services that you would dry up our current distribution system and make it centralized so that people bought everything, got on the Internet, bought their goods and services on the Internet, and it was delivered to them, rather than going to a local store. But, if we permit that as a possibility, then I think the lower the transportation cost will translate directly into increased quality of life in sparsely populated areas.

A lot of our cost of living in sparsely populated areas is in transporting the things that we consume to us and transporting the things that we produce to our markets. So, if we lower those costs, it has to make someone better off.

Mr. Barkema: And this will be our last question.

Richard Lloyd, *The Countryside Agency (UK):* First, an observation. The problems that you're wrestling with are almost identical to the ones that we are beginning to wrestle with on the other side of the Atlantic, admittedly on a smaller scale. That's an observation. I think it's going to be very interesting to hear your thought processes on how you're going to deal with it over the next day or so. The second is a comment about the European perspective on all of this, and I share the analysis. I would just like to say that I think our long-term goal over the next ten years is to move from the common agricultural policy which we've got, which is rather a millstone rather than an asset in many ways, and turn that common agricultural policy into a common rural policy to begin to tackle the wide variety of problems in rural areas which we're beginning to hear about this morning. The amazing thing is the virtually identical issues that you're grappling with on this side of the Atlantic to the ones that we're trying to grapple with.

My organization, incidentally, we've been operating about a year now. We bring together the government agency that dealt with conservation issues with the government agency which dealt with rural development and rural communities. And, we try to tackle the environmental, the social community, and economics. Sustainable development—what is it, what does it mean, and how can we implement it? And, I think that's a very useful bringing together of bits of public administration.

Mr. Barkema: Thank you for the comment. Tom?

Mr. Johnson: I agree with you. It is amazing how so many of the trends, and thus, the issues are global and not just a Midwest problem or a U.S. problem.

They are global. They play themselves out in different ways sometimes, and they certainly play themselves out in different contexts . . . the agricultural policy that you mentioned, for instance. I'd like to point out that American farmers and, I know, Canadian farmers, are quite skeptical about the support for "rural" as opposed to "agriculture." They suspect very strongly that it is just support for agriculture in disguise.

On the other hand, I think the concept to the extent that it could be implemented in Europe, and similar ideas implemented here, makes a lot of sense. The agriculture sector in the rural economy in general produces many, many things besides food and fiber. And, it goes back to the incentive question. They produce many, many things. Most of it, they produce for the rest of the nation, and they produce it free. And as a result, they underproduce it. They don't have the appropriate incentives to produce it at the right places at the right time. It will be in everyone's interest to have policies that create the incentives for rural people and farmers to produce the right commodities at the right place at the right time.

Mr. Barkema: Ladies and gentlemen, it is with that international perspective that we will conclude this opening segment of our first session this morning. Thank you very much for your participation and your very useful dialogue with Tom. And Tom, thank you once again. We are now going to adjourn briefly for a coffee break. We do have a rigorous schedule this morning and do need to stay on time. We will reconvene promptly at 10:30 a.m. We are recessed.

Rural Policy in a New Century

Ray Marshall

This paper addresses two questions: (1) where U.S. rural policy is and (2) what policy gaps are likely to emerge if current policy is unchanged.

Where is rural policy?

An examination of rural policy requires an understanding of the unique conditions in rural places that justify separate national policies. The great differences among rural people and places in America make it hard to fashion national policies that fit all of these places. The analytical problem also is complicated by this diversity as well as the absence of a common statistical definition of rural and the need by policymakers to both accommodate rapidly changing rural conditions and balance diverse interests.

While imprecise and changing, I believe there are relatively unique rural conditions which I outline below. I then trace the broad outlines of the evolution of rural policy from the New Deal to the Clinton Administration, and then examine in more depth two important components of rural policy—human resource development and telecommunications—which illustrate why separate rural policies are warranted. I conclude with my assessment of the policy gaps that are likely to remain if current policy is unchanged.

There are several characteristics of rural areas that make them relatively unique and therefore justify special policies. The most important of these is relatively low population densities, which create fewer organizational resources for most activities. Population densities also make it difficult to achieve economies of scale in the provision of services, and therefore cause many costs to be higher, and require people and organizations to be less specialized. The exception, of course, is the heavy specialization of many rural places on single natural resource-oriented industries like agriculture, mining, and energy. These industries often have had profound effects on rural areas because they have concentrated resources in a few hands and contributed to the concentration of economic and political power and therefore weakened democratic and civic institutions. These dominant interests often have given very limited attention to, or even impeded, the development of human resources. The dominance of resource-oriented industries also caused the large nonfarm sector—now representing over 90 percent of the rural population and work force—to lack sufficient visibility or political cohesion to establish policies for all rural people and industries. In the minds of many people rural policy has been synonymous with agricultural policy.

Unequal distributions of wealth and income have created deep and often self-perpetuated pockets of rural poverty, which is likely to be different from urban poverty. In urban areas more poor people are single-parent heads of households. In rural areas they are more likely to be the working poor. Employment and training programs are therefore likely to do more for rural than for urban poverty. Wherever the poor are relatively small parts of rural societies with social cohesion, as in New England,

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poverty is likely to be more temporary than it is in areas like the Mississippi Delta or Appalachia, where power is more concentrated and poverty more pervasive (Duncan). As I show later in connection with the development of rural education, however, some pervasive social impediments to rural human resource development are unrelated to the concentration of power.

THE EVOLUTION OF RURAL POLICY

Definitions of rural policy also are complicated by the fact that policies and programs have been evolving. Much of U.S. rural policy in postwar America was developed by the New Deal during the Great Depression. Rural policy became part of a fairly coherent national policy whose main objective was recovery from the depression, the prevention of further depressions, and broader participation in economic progress. A basic assumption was that the American mass production manufacturing and agriculture systems were basically sound except for imbalances in competitive markets. Farmers and workers, for example, sold on competitive markets and bought on noncompetitive markets, leading to cost-price squeezes which, because of the importance of workers and farmers as consumers, led to recessions and depressions. The trick was to balance market competition and provide purchasing power for farmers and workers. The farmers' basic price problem was that individual farmers faced highly elastic demand for their products, but collectively demand was relatively inelastic. As a consequence, by producing more to overcome cost and debt problems, farmers had lower total revenues, digging their hole deeper. The New Deal's solution was agricultural price supports for farmers, collective bargaining and minimum wages for workers, and social security or old age assistance for the elderly. However, basic reliance was placed on monetary-fiscal policies to stimulate aggregate demand. World War II seemed to justify this combination of policies because, despite contributing a large part of our national output and most of our young working-age males to the war, the average American was better off in material terms when the war ended than when it started.

The American economy benefited in the postwar period from the commercialization of technology developed during the war and from the GI Bill, which greatly improved the education and skills of a generation of American men. The consequences of all of this was the longest period of relatively broadly shared prosperity in history. Indeed, broader participation was central to the New Deal's policies.

The New Deal policy paradigm was eroded by the closely related forces of technology and the spread of competitive markets. Globalization is part of this process, but the spread of competitive markets, facilitated by technology, is the main force at work. Globalization is important because it greatly increases options for producers and consumers and puts economic decisions beyond the reach of national policies, regulations, and institutions. It is no longer possible, for example, to take labor and agriculture out of competition through the kinds of policies employed by the New Deal. Technology simultaneously decentralizes production to smaller producing units and enables companies to control vast dispersed activities.

More competitive global markets changed the effectiveness of macroeconomic policy by creating global leakages in demand and making exchange rates, and not just interest rates, important policy outcome considerations. The Keynesian system stressed *national* income and became less effective in an industrial environment.

Globalization changes microeconomic policy as well. Traditional national oligopolies and natural monopolies, which had dominated America's basic mass production industries, became obsolete. Instead of economies of scale from large fixed factors of production, firms compete by giving more attention to quality, productivity in the use of all resources, and flexibility to adapt to dynamic and diverse markets and rapidly changing technology. Firms, individuals, or places have only two basic competitiveness choices: lower costs, mainly wages, or value added (i.e., quality and productivity). While companies can maximize profits by either direct cost or value-added competition, the impact of direct cost—mainly wage competition—apparently is to lower real incomes for many people and widen inequalities of wealth and income.

Rural areas attracted many manufacturing companies during the 1970s as a result of more intensive cost competition, often induced by state and local subsidies (Galston). However, much of this manufacturing was unsustainable and, along with competitiveness problems in the agricultural, raw material and energy sectors, contributed to rural America's problems during the 1980s. However, rural areas resumed some of their growth during the 1990s, partly because of continuing cost competition, but increasingly because of high value-added productivity, the physical amenities of many rural places, and the geographic independence information and transportation technology permitted knowledge workers to have.

The key to rural America's future is to continue these trends through high value-added competitiveness strategies. These strategies have three elements: high-performance work organizations, human resource development, and supportive policies and institutions. High-performance work organizations stress lean, decentralized participative production systems instead of the command and control processes that dominated mass production businesses, schools, and governmental organizations; the development and use of leading-edge technology; positive reward systems; and continuous learning and higher order thinking skills for frontline workers as well as managers and technicians.

Above all, a high-performance organization is an efficient learning system. The essence of its performance is to substitute ideas, skills, and knowledge for physical labor and resources. This process has been going on in American agriculture for a long time. This is how economics Nobel laureate Theodore Schultz (1981) developed his concept of human capital. Schultz found that American farmers had greatly increased output with less land, labor, and capital mainly by working smarter. Schultz also demonstrated that the returns to human capital were higher than the returns to physical capital. Peter Drucker illustrates the growing knowledge intensity of modern production by comparing the most representative product of the 1920s—the automobile—with the most representative product of our day, the computer chip. According to Drucker, the 1920s automobile was 60 percent energy and raw material and 40 percent knowledge; the computer chip is 2 percent energy and raw materials and 98 percent knowledge.

Because cost competition limits the development of productive capacity and leads to unequal income distribution, public policy should encourage high value-added competition, which could create steep earning and learning curves, promote broadly shared prosperity, and strengthen civic society and democratic institutions. I will give my list of high value-added policies after reviewing changes in rural policy during the 1980s and 1990s.

RURAL POLICY IN THE 1980S

Perhaps a good summary of rural policy in the 1980s was the USDA-Economic Research Services' July 1987 report *Rural Economic Development in the 1980s: Preparing for the Future*, which was a response to a Senate Appropriations Committee directive. This report first noted some of the major economic stresses afflicting rural America in the 1980s: slow rural growth and high unemployment, reduced population growth, and underdeveloped human resources. The report noted that throughout the 20th century a disproportionate share of the nation's poor resided in rural areas, and unlike metro poverty, rural poverty did not decline with the recovery from the recession of the early 1980s. Moreover, the rural poor were more likely to be elderly, white, working, and living in the South. And nonmetro people continued to lag behind metro residents in formal education. The nonmetro high school completion rate lagged the metro rate by about ten percentage points and the college graduation gap had actually widened.

The report emphasized the diversity in rural America, that retirement/recreation areas had continued to grow and that 700 of 2,400 nonmetro counties depended mainly on agriculture, 700 on manufacturing, and 200 on mining and energy extraction.

The ERS staff report identified four elements of a rural policy:

1. *Macroeconomic policy.* The rural economy had become more integrated into the national economy, so "rural employment has become slightly more sensitive to change in macro policies than urban policy." In particular, rural areas were especially hard hit by high real interest rates and the high value of the dollar during the early 1980s. Moreover, "Rural areas have a major stake in macro policies to promote rapid rates of real economic growth."

2. *Sectoral (industrial) policy* "regulates the performance of individual industries or focuses on redressing industrial decline." The report pointed out the political attractiveness of this option in some circles, but leaned against it because "such policies have the potential to become primarily protectionist, thus inhibiting needed adaptation and change in rural economies."

3. *Territorial (place-oriented) policies* have been major elements in national rural policy, which "basically focused on strategies to ameliorate differentials in levels of economic activity, growth, and rates of return between rural and urban areas." It noted, however, that the complex international and national forces accounting for rural stress "may significantly reduce the efficiency and feasibility of such place-specific policy." The staff report therefore leaned against these interventions in favor of free market policies.

4. *National human resource policies* are acceptable because many rural people will be displaced and leave rural places or traditional industries. "Human resource policies to prepare people to enter the labor force, to equip them for occupational changes, and to enhance their opportunities to be reemployed if they are displaced are central to the amelioration of rural economic distress."

The report opposed sectoral and territorial approaches in favor of human resource development. Moreover, it noted that rural diversity made national rural policy difficult, so states and rural communities must be mainly responsible for rural policy.

> There are, however, significant externalities resulting from rural structural change that provide the economic rationale for a federal role. That role includes creating a macro environment conducive to economic growth, facilitating multi-state or multi-community approaches to solving rural problems, and assuring adequate levels of investment in human resources. The federal government also has a comparative advantage in providing information and conducting analyses of broad national and rural economic changes that help to shape policy.

The report pointedly dodged the equity questions of whether or not the federal government had a responsibility to ease the adjustment problems created by federal agriculture, macro, or competitiveness strategies, noting only that some people argued for such a role but that there was "considerable debate" about it.

Not surprisingly, many rural leaders and experts were critical of the ERS report's philosophy and conclusions. For example, a report by the Center for Rural Affairs noted that "National agricultural policies had generally worked against [small agricultural] communities by encouraging crop specialization and farm consolidation, narrowing their economic base and depleting their population base. Meanwhile, the federal government has largely left economic development policy to the states" (Strange, p. 1). The report concludes:

> State economic development policies for rural areas must be considered in the context of federal rural development policy. Unfortunately, there is no such federal policy context.
>
> For as long as anyone can remember, rural policy has been the distant unwelcome cousin of farm policy. (p. 18)

With respect to the 1988 ERS report, these analysts concluded:

> Facilitating the smooth and rapid movement of capital and labor from weaker to stronger industries and from less competitive to more competitive locations is about as explicit a statement of intervening on behalf of the already advantaged as can be made. This is a policy of favoring the favored. It is not, however, a rural development policy. It is better described as a rural restructuring policy.

THE CLINTON ADMINISTRATION POLICY

The Clinton Administration has been more concerned about equity and the development of places, but still emphasizes the deregulation of agriculture, global markets, and the devolution of responsibility to state and local areas, but has a more explicit role for the federal government than was enunciated in the 1988 ERS report. The Administration stresses the establishment of partnerships with business, private nonprofits and agencies of government. It also stresses coordination and flexibility to make the delivery of federal resources more efficient.

The Administration's rural development mission is to "enhance the ability of rural communities to develop, to grow, and to improve their quality of life by targeting financial and technical resources in areas of greatest need through activities of greatest potential" (USDA 1997, p. 7).

The Clinton Administration's rural policies are based on the following guiding principles:

> 1. Enhancing the connection between rural and urban areas by improving information infrastructures, disseminating information, and enhancing rural businesses' and people's ability to use this infrastructure.
>
> 2. Assisting and encouraging rural firms to target niche markets.
>
> 3. Creating "artificial scale economies" to offset the high costs of providing government services in rural areas. This can be accomplished by the joint purchase of services through business or community partnerships.
>
> 4. Improve the competitiveness of rural firms by strengthening core labor and management skills.

Despite the diversity of rural communities, the Administration believes most of them share the common problem of financing needed improvements. Financing is a problem for rural communities because there are small numbers of users to repay debts, high costs for each user because of their small scale, the lack of project development and management expertise, and the absence of bond ratings. Similar financing problems confront rural residents and businesses. The USDA's rural development programs are designed to meet these diverse needs through a variety of loans, loan guarantees, grants, and technical assistance programs.

The Administration's *Rural Development Strategic Plan for 1997-2002* reported rural development loans outstanding of $77.7 billion. These loans were for businesses and cooperatives to create jobs and stimulate rural economic activity; rural housing, and community facilities; electric, telecommunications, water, and waste programs; and the Empowerment Zones and Enterprise Communities (EZ/EC) initiative, whose mission is "to create self-sustaining, long-term economic development in areas of pervasive poverty, unemployment, and general distress, and to demonstrate how distressed communities can achieve self-sufficiency through innovative and comprehensive strategic plans developed and implemented by alliances among private, public, and nonprofit entities." The Secretary of Agriculture designated three rural Empowerment Zones and 30 Enterprise Communities, which began implementing their strategic plans in 1995. The appendix to this paper provides a list of the EZ/EC sites and a list of accomplishments as of January 1998 (USDA 1998). This initiative is being evaluated by the North Central Regional Development Center.

The USDA also sponsors the National Rural Development Partnership (NRDP), a network of rural development officials and leaders organized by the National Rural Development Council, 36 State Rural Development Councils, and the USDA's National Partnership office.

A major purpose of the Administration's rural development initiatives is to build local civic capacity, which it believes to be an essential precondition for effective development. The 1999 *Rural Development Policy and Strategy Report* notes:

> The federal government does not have all the answers or resources to independently formulate and implement rural development policy to address the needs of all communities. Therefore, the Administration's rural strategy recognizes that local residents are best qualified to fill in the details to reflect a complete understanding and uniqueness of regional character and state and local capacity. The Administration's rural policy is vested in the ideals of self-reliance and empowerment. It recognizes that local civic capacity and participation are indispensable to sustainable development. Unfortunately, the local capacity in many of the poorest areas of rural America is largely undeveloped. Recognizing this, the Administration has established the... EZ/EC initiative.

The Administration sees several "dominant policy directions" emerging in response to the changes under way in rural America. These include "culture change, flexibility, empowerment, and coordination." The culture change is to transform the federal government to "more of a partner in development rather than just a provider of loans and grants." The Rural Community Advancement Program of the 1996 Farm Bill "provides the flexibility to target resources to the most pressing local needs." The EZ/EC empowerment initiative has caused local communities to develop "leadership skills by participating in the [planning process]" and has caused people to develop "greater understanding of their communities. . . . Furthermore, working with local leaders . . . has created a positive culture change among federal . . . employees in the numerous agencies . . . participating in the EZ/EC program."

The Administration's National Performance Review Report "recognized the importance of collaboration and suggested increased emphasis on intergovernmental and intragovernmental collaboration." As a consequence, coordination among various agencies has increased through a designated lead agency, and memorandums of understanding (MOUs) and agreement (MOAs).

AGRICULTURAL POLICY

Historically, one of the most important federal rural initiatives has been the farm price support program, which, as noted earlier, attempted to stabilize agricultural prices and establish income parities for farmers. Essentially, this program subsidized land and capital and therefore displaced people, with a number of serious social and economic problems noted earlier. Farm price support likewise encouraged the creation of interest groups to perpetuate the political power of commercial agriculture and prevent alternatives like the Truman Administration's Brannon Plan, that would have limited federal farm supports to family-sized units and might have done more to sustain more efficient family farms, which in turn would have strengthened rural civic society and broader participation in rural development. Family-sized farms also might have been less damaging to the environment. There is considerable evidence that in terms of farm production, family-sized farms are more efficient than the large organizations subsidized by U.S. price support programs (Marshall and Thompson).

These developments have subjected American farmers to international competition from foreign producers who are heavily controlled by foreign governments intent on preserving their agricultural sectors. The growing concentration of agriculture has shifted from farming to processing, where fewer firms control larger supply chains (Dorgan).

The Farm Bill of 1996, the Freedom to Farm Act, was designed to move American farmers to free market agriculture and phase out the subsidies. According to Sen. Byron Dorgan, who favors a Brannon Plan-like program to help sustain family farmers, proponents said the 1996 Farm Bill "would 'free' farmers from the stifling bureaucracy of the federal government and enable them to make their fortunes in the global marketplace" (p. 11). But with the global agricultural depression of the 1990s, the Act "really left them free to . . . Get Out of Farming." The Act "phases out the federal-price support program over . . . seven years. During that time, it doles out between $5 billion and $6 billion a year in transition payments . . . to all agricultural entities, regardless of size and regardless of need. The bigger you are, the more you get . . . ."

A report by the Environmental Working Group confirms Senator Dorgan's conclusion that the 1996 Act's farm subsidies went mainly to large producers. In Iowa, for example, half of the payments went to 12 percent of recipients—mostly corporate and partnership farms—and 51 percent of the payments were less than $6,000 each during the program's first three years. The 1996 Act was supposed to have weaned farmers from subsidies by guaranteeing fixed payments and allowing them to plant whatever they wanted. But the program not only went mainly to larger producers, but did little to protect farmers from inevitable declines in farm prices. As a consequence, Congress responded with emergency farm bills of $6 billion in 1998 and $8.9 billion in 1999. However, these do not include all federal subsidies. In Iowa, for example, farmers got $441 million in 1996, $646 million in 1997, and $929 million in 1998. Iowa's three-year total of $2 billion was $243 million more than it got the previous three years. However, this does not capture all subsidies: "All told, the state received $1.54 billion in 1998, including special aid to hog farmers, disaster payments, crop insurance indemnities, and conservation payments . . . . The final tally is expected to show that Iowa agriculture got even more money in 1999" (p. A-16).

The Clinton Administration's *Strategy for the Future* includes: "Promote agricultural exports and provide information on risk management techniques and opportunities to increase demand for U.S. commodities and assist the transition to a more market-driven agricultural economy. Actively develop foreign market opportunities in undermarketed areas such as Africa." The USDA's specific activities under this strategy include the promotion of foreign markets; breaking down protectionist barriers; supporting and encouraging cooperative and other vehicles "to increase efforts to expand markets and facilitate farmer ownership of raw material processing facilities as a means to increasing net farm income for family farmers," ensuring that "strategic planning recognizes the important role that agriculture holds in specific small communities and regions;" and supporting "research to help producers become more competitive . . . ."

SUPPORTIVE POLICIES: HUMAN RESOURCE DEVELOPMENT AND TELECOMMUNICATIONS

As noted earlier, a high value-added rural development strategy requires supportive policies to encourage improvements in productivity and quality through high-performance production systems. Policies to support high-performance systems include rules for the development of competitive foreign and domestic markets; infrastructures; advanced science and technology; improvements in factor as well as product markets; and safety nets to limit wage competition, promote social cohesion, ensure a more equitable sharing of the benefits and costs of change, facilitate market adjustments, and prevent economic restructuring and market forces from damaging society's most vulnerable people. All of these supports cannot be examined in this paper, but two warrant special attention: human resource development and telecommunications, a necessary infrastructure for knowledge-intensive processes with special relevance to rural places.

Human resource development

Education and worker training are uniformly regarded as necessary elements in a high-performance rural development policy. This is so because of the importance of education for the quality of life, vibrant civic and democratic institutions, and improvements in productivity and earnings. Indeed, numerous studies have confirmed Theodore Schultz's conclusion that the returns to human capital are higher than the returns to physical capital. The National Center on the Educational Quality of the Workforce, for example, found that a 10 percent increase in education was associated with an 8.6 percent increase in productivity, while a 10 percent increase in physical capital was associated with a much smaller 3.4 percent increase in productivity (NCEQW, p. 2). There also is mounting evidence that skills account for a larger proportion of the higher rates of productivity in recent years that have made it possible to sustain economic growth and improve earnings without inflation. According to the Bureau of Labor Statistics, skills accounted for only 2.8 percent of the increase in productivity during 1973-79, but 32 percent from 1990 to 1997 (*Monthly Labor Review*). Individuals as well as society gain from higher levels of education. The college/high school earnings premium in 1979 was only 39 percent, but was 71 percent in 1998. The premium had been 77 percent in 1995, but declined thereafter as tight labor markets increased the earnings of high school relative to college graduates.

It should be noted, however, that education and training alone will not necessarily improve earnings. To be most effective a human resource development strategy must be an integral component of high value-added economic development to increase the demand for skilled workers (Rosenzweig).

We should note, in addition, that not all skills are developed in schools. Indeed, many of the skills acquired in traditional rural or urban schools are not those in the greatest demand by high-performance companies. Although schools are pivotal and need to be improved, families and workplaces are more important for many important higher order skills (Marshall and Tucker). And family characteristics are major predictors of achievement in school, as are neighborhood and peer attitudes and characteristics. Comparisons of rural and urban schools, families, communities, and

Table 1

AVERAGE ACHIEVEMENT SCORES OF 17-YEAR-OLDS BY REGION AND RESIDENCE, 1975-94

	United States		South
Subject/area	1975	1994	1994
Reading			
Urban	286.0	288.5	285.8
Rural	283.5	287.4	280.9
	1978	1994	1994
Mathematics			
Urban	301.6	306.7	303.8
Rural	297.4	305.0	298.5
	1977	1994	1994
Science			
Urban	290.0	291.9	289.4
Rural	287.5	298.3	287.1

Addendum for suburbs:

	1994
Reading	293.7
Mathematics	313.2
Science	298.1

Source: Greenberg, Elizabeth J. and Ruy Teixeira. "Educational Achievement in Rural Schools." *Rural Education and Training in the New Economy.* Eds. Robert M. Gibbs, Paul L. Swaim, and Ruy Teixeira. Ames, Iowa: Iowa State University Press, 1998. pp. 25, 27, 28.

workplaces therefore provide insights into rural and urban human resource development.

RURAL EDUCATION ACHIEVEMENT

The evidence shows rural schools to have some advantages that have enabled them to close the education achievement gaps they historically have had with urban students, even though they have fewer resources. For example, the education achievement of rural 17-year-old students as measured by the National Assessment of Education Progress (NAEP) closed the gap with urban areas in reading and math between 1975 and 1994 and rural students actually exceeded their urban counterparts in science in 1994 (Table 1).

Outside the South, rural NAEP scores exceeded or equaled those of urban 17-year-olds in all subjects in 1994. The southern scores for whites were about the same as in other regions, but were much lower for minorities. It should also be noted that suburban 17-year-olds generally had higher NAEP scores than those from rural or other urban areas, though rural science scores slightly exceeded those of suburban areas by 1994.

Rural students also have increased their years of schooling and reduced their dropout rates relative to urban students. Among 25-year-olds, between 1982 and 1989, 85 percent of their rural residents had graduated from high school compared with 86 percent of urban residents. However, only 22 percent of rural residents had graduated from a two- or four-year college at age 25, compared with 30 percent of urban counterparts (Gibbs, p. 63). Lower rural college graduation rates are associated with lower levels of education by rural people and less access to local colleges and universities. College graduates who leave rural areas earn about as much as their urban counterparts but those who remain in rural areas earn much less. Indeed, for rural residents, education and skills yield much lower returns than they do for urbanites (McGranahan and Ghelfi, p. 151).

Despite improvements, high school dropouts remain a problem for rural areas, especially for students in grades 10 through 12, where the 1990-92 rural dropout rate was 8.1 percent, compared with 6.6 percent for urban and 5.5 percent for suburban areas, respectively (Paasch and Swain, p. 47). Dropout rates for students in grades 8 through 10 are higher in urban (7.7 percent) than rural (6.3 percent) areas, but both are higher than for suburban students (4.8 percent). Rural and urban students face similar dropout risk factors, but rural students have greater risk from low parental income and education and less risk than urban students because rural students change school less frequently.

Some evidence on the characteristics of rural teachers and schools is provided by the 1987-88 Schools and Staffing Survey (SASS). These data support a number of conclusions:

1) Rural schools have less diversified course offerings, though rural students are at a disadvantage in math and science only when compared with suburban students. For example, central city students spend 2.7 percent of their hours in advanced math, compared with 3.4 percent for suburbs and 2.7 percent for remote rural schools; the comparable percentages for advanced science were 7.2, 9.0, and 6.9, respectively (Ballou and Podgursky, p. 6). Rural students are particularly disadvantaged in advanced courses and preparation for college. Only 64 percent of rural high school graduates have had calculus compared with 93 percent for urban graduates; the comparable figures for physics are 64 percent and 34 percent (Gibbs).

2) Rural students' more limited program offerings are offset by lower student/teacher ratios. The ratio for central cities was 21.2; suburbs, 17.8, and remote rural areas, 16.0 (p. 8). Rural schools have similar low ratios of students to other school staffs. Rural schools also are smaller, another favorable factor in student achievement. Central city schools, for example, average 688 students per school, compared with 570.3 for suburban and 317.7 for remote rural schools (p. 5).

3) Rural teachers have lower pay. In 1987-88 starting teacher salaries were $20,030 a year for central cities, $19,084 in the suburbs, and $16,530 in remote rural areas. There were larger differentials for experienced teachers: $35,398, $34,251, and $26,245, respectively. However, rural teachers are no more dissatisfied with their pay than urban teachers and are more satisfied with their work environment. In fact, Ballou and Podgursky conclude that the data "do not support the claim that rural schools are unable to recruit qualified teachers" (Ballou and Podgursky, p. 10).

4) Other rural-urban teacher differences include:

a. Rural teachers are younger: 42.7 years for central cities, 42.2 for suburbs, and 40.4 for remote rural areas. The comparable total years of experience are 16.4, 16.9, and 15.3; average tenure at current schools are 8.9, 9.7, and 9.7. Thus, while they are younger and have less experience, rural teachers have longer tenure at their current schools than central city teachers and the same as suburban teachers.

b. On almost every measure of satisfaction with their work environment, rural teachers report more attractive working conditions than their central city counterparts. These factors include student tardiness, absenteeism, and possession of weapons; physical abuse of teachers; more contact with principals; more effective principal support; more classroom autonomy, choice of textbooks and course content; homework and discipline; greater influence on school policy; more cooperative and collegial relationships with fellow teachers; more support from parents; and more likely to find needed resources. However, as with student achievement, southern rural teachers lag their non-southern counterparts: they tend to be less satisfied with their salaries, resources, and class sizes. Southern rural teachers' salaries are low even for rural schools and their students' test scores are well below those of rural students in other regions. To a considerable extent, rural southern student disadvantages reflect the larger proportion of minority students. Southern white student test scores are comparable with whites in other regions. These outcomes reflect a history of racial segregation and inadequate resources for minority schools.

c. Rural schools have some benefits from the nature of the communities in which they operate. Communities and parents are more likely to be involved in the schools' activities and school personnel are more likely to live in and participate in community affairs. In remote rural areas, for example, secondary school teachers devote 5.5 hours a week to after-school activities involving student contact compared with 4.0 for central city secondary teachers and 4.2 for those in suburban schools.

d. Rural schools have fewer resources and less modern facilities on average than urban schools, especially those in the suburbs. The rural disadvantages are particularly serious in physical facilities. Nonmetropolitan school districts are less likely to have modernized their facilities in recent years. Between 1994 and 1998, for example, 21 percent of metro and only 9 percent of nonmetro school districts had built at least one new school for the fastest growing districts; 34 percent of metro and only 11 percent of nonmetro districts had built a new school during these years. According to two school facilities experts, nonmetro "tax rates are lower, their expectations are lower and they don't feel the need to provide at the level suburban districts do" (De Barrso and Henry 1999, p. 1). Aging rural schools are a particularly serious problem for the development and use of modern information and communications technology.

In March 2000, the Clinton Administration announced the Rural Community Schools Rebuilding Program (RCSRP) to provide rural schools with access to up to $1.2 billion in financing to repair school buildings, acquire new equipment, develop course materials, and train teachers and other school personnel. Participating lenders will receive tax credits for providing school districts interest-free loans. The USDA will guarantee up to 90 percent of the amount school districts borrow from private lenders. The RCSRP is a joint effort by the USDA and the Organization Concerned About Rural Education (OCRE), a coalition of business and nonprofit organizations, including Bell Atlantic, U.S. West Communications, the National Education Association, and the National Farmers Union.

WORKPLACE SKILL DEVELOPMENT

Rural workplaces have relatively little workplace training for frontline workers, though this is a problem for all American companies relative to their counterparts in other countries (Marshall and Tucker). Training is a particularly serious problem for small firms, which constitute a larger proportion of rural companies. The basic problem is externalities: some firms pay for training and other firms and workers benefit. Basic economics suggests that firms will underinvest in such activities. Although it changed significantly during the 1990s, when rural areas experienced a growth in high-performance work practices, they still lag urban areas. High-performance companies are important because they pay higher wages, are growing faster, and do more training.

An analysis of census data for 1983-91 revealed that for manufacturing only 32.2 percent of rural and 41.4 percent of urban workers received any training on their current jobs (Swaim, p. 108). A major reason nonmetropolitan workers are significantly less likely than metro workers to participate in skill upgrade activities is the composition of employment. Other rural factors limiting education and training include lower rural educational and literacy levels and limited access to colleges and other training institutions.

The evidence suggests that while skill requirements increased significantly during the 1990s, most rural and urban employers actually have not encountered significant shortages of skilled labor. A 1996 Rural Manufacturing Survey (RMS) by the ERS found that 71.9 percent of urban and 74.9 percent of rural respondents reported the quality of available labor to be a problem, the most important of 21 factors influencing industrial location (Teixeira and McGranahan, p. 117). However, only 33.0 percent of urban and 34.3 percent of rural manufacturers reported the quality of labor to be a major problem. The specific skills for which demand increased the most between 1991 and 1996 were computer, interpersonal/teamwork, and problem solving, all of which are critical for high-performance workplaces. Rural manufacturers adopting larger numbers of high-performance practices (i.e., new production technologies, forms of work organization, and telecommunications) had substantially more trouble finding qualified workers than low adopters. Problems for high adopters were particularly intense in counties whose populations had low levels of education. For example, over 40 percent of high adopters report having trouble finding workers with adequate problem solving skills in counties where less than 75 percent of young adults (ages 25 to 44) had at least a high school diploma, compared with under 30 percent of such firms who have difficulty finding workers with such skills in counties where 90 percent of young adults are high school graduates (pp. 124-25).

High adopters likewise are much more likely to provide training. According to the RMS data, only 48 percent of rural manufacturers provide training for production workers, compared with 77 percent for high adopters and 40 percent for low adopters. And 82 percent of high adopters but only 66 percent of medium/low adopters increased training between 1993 and 1996; 44 percent of high but only 26 percent of low/medium adopters increased training a lot (125). Teixeira and McGranahan conclude that:

> Skill requirements at rural manufacturing establishments are increasing about as fast as at urban establishments, with one exception (computer skills). Rural manufacturers appear just as willing as their urban counterparts to raise skill requirements to meet new economy production standards, an assessment supported by the fact that nearly as many rural manufacturers as urban (21 to 24 percent) are high adopters of new technology (p. 126).

CONCLUSIONS

Rural areas have closed their education achievement gaps with central cities, but both still lag behind suburban areas. Moreover, while schools have improved, all fall short of the schools needed to prepare students for personal and work lives in a more competitive and knowledge-intensive world. Rural schools have some advantages, including smaller sizes and more cooperative relationships between teachers, parents, and community organizations, and lower student-teacher and school staff ratios.

The rural schools' main disadvantages include fewer advanced course offerings, less attention to college preparation, lower college graduation rates, inadequate physical and education resources, and higher dropout rates. Rural school achievement compares favorably with central city schools, but both lag suburban schools on most indicators.

While they are improving, rural employers provide limited job opportunities for college graduates, many of whom leave rural areas. Those who leave fare well compared with their urban counterparts and much better than college graduates who remain in rural areas. Indeed, rural areas generally provide relatively low returns to education and skills. And the rural environment provides less encouragement for the acquisition of advanced skills and higher education than metropolitan areas. Rural parents are less likely to be educated and have lower incomes; rural high school graduates' peers are less likely to plan to attend college, and rural people generally have less access to local colleges and universities.

Rural enterprises also are less likely to demand workers with higher order skills or to provide much training to their incumbent workers. A major reason for this is the higher concentration of small low-wage firms in rural areas. Most rural and urban firms do not consider skill shortages to be a major problem. However, those who do are more likely to be the growing minority of firms (21 percent of rural and 24 percent of urban) that have adopted high-performance work practices, and perceive shortages of workers with computer, problem solving, interpersonal/teamwork, and math skills to be major problems. These firms have faster growth, higher wages, and provide much more training to frontline workers.

BUILDING RURAL INFRASTRUCTURES: TELECOMMUNICATIONS

Telecommunications have become an important infrastructure in a knowledge-intensive economy. This technology has great potential to overcome many rural developmental disadvantages. There are real questions, however, concerning the extent to which the national policy of developing this infrastructure through competitive markets is applicable to rural areas. The relevance of competitive or deregulated markets is applicable to many other activities, including health care, schools, financial institutions, and electric utilities. This section explores some of these issues with respect to telecommunications.

The current effort to build the national information infrastructure (NII) must take cognizance of the great diversities in conditions throughout the United States. It is particularly important to note the unique conditions of relatively small towns and rural areas, where telecommunications have great promise—and much actual experience—to reverse the decline in population, income, and employment that accelerated during the 1980s. Information infrastructures have the capacity, when combined with effective rural leadership and development strategies, to literally transform these places and to counteract some of the problems created by low population densities and distance. There are remarkable examples all over rural America of telecommunications being used to improve health care, education, recreation, community organization, and development. Indeed, there is evidence that telecommunications played a role in the economic recovery of rural areas during the 1990s.

The main challenge is to maximize the potential for telecommunications as a tool for rural development and to determine whether or not rural areas are sufficiently different from urban places to justify different treatment in policies to promote the development of the NII mainly through private investment and effective competition.

THE ROLE OF TELECOMMUNICATIONS: GENERAL EVIDENCE

The rural challenge for the development of information technology is all the more serious because of the mounting evidence, as the Office of Technology Assessment concluded, that communities and businesses that have limited access to these technologies "are unlikely to survive" (OTA 1991). However, the OTA study adds, "these technologies could help rural communities overcome a number of the barriers that have limited their economic well-being in the past." The OTA report presented case studies that demonstrated how companies had used sophisticated telecommunications to deliver advanced, big-city financial services to smaller towns and rural areas; improve the performance of rural businesses;

improve health care delivery by linking rural doctors and hospitals to medical schools and specialists; improve rural education through specialized computer programs, information retrieval processes, and bringing specialized teachers to rural students; provide electronic video and audio materials to strengthen rural leadership; unite rural people with common interests across wide areas; and allow widely scattered people in places like Alaska to participate in legislative hearings and other functions of government.

While major benefits can be achieved for rural manufacturing, wholesale, insurance, finance, tourist, and other activities, telecommunications also can produce major benefits for agriculture, which has been slow to abandon mass production, producer-driven practices in favor of the better use of information to target specialized markets (Sunbelt Institute).

There is growing evidence from the United States and abroad to demonstrate the value of telecommunications for rural development. Relatively small companies in Northern Italy and Denmark, for example, have established global, high performance strategies to dramatically improve income and employment opportunities for rural people, mainly through the use of communications networks to improve productivity, quality, and flexibility (Rosenfeld). These small companies exhibit a mixture of intense competition and close cooperation to achieve the scale and scope advantages of large organizations and the flexibility of smaller ones. Cooperation and competition would not be possible without high quality telecommunications networks that make it possible to coordinate various activities (training, financing, and marketing) and maintain information flows between and among organizations.

There is both case study and econometric evidence of the value of telecommunications for rural development in the United States. Early quantitative research showed that the availability of telephones contributed to rural development, with important positive externalities, which means that the general benefits (i.e., to customers, government, business, and others) were significantly greater than the direct benefits to providers (Parker et al.). Since this earlier research compared areas with and without telephones, it becomes less relevant now that over 95 percent of U.S. metropolitan and over 91 percent of nonmetropolitan households have basic telephone service. However, later research shows that investment in telecommunications infrastructure, not just the presence of telephones, increases gross national product (DRI/McGraw-Hill; Cronin et al.).

Input-out analyses disclose two kinds of savings from telecommunications: (1) technological innovations lower costs, which produce additional efficiencies as telecommunications are substituted for more expensive alternatives like travel; and (2) these efficiencies produce net improvements in other industries, where most of the savings from telecommunications investments occur.

RURAL AREAS ARE DIFFERENT

As noted earlier, relative to urban areas, rural places cover greater distances and have lower population densities and fewer opportunities for specialization, all of which increase the costs of rural telecommunications services. A surprising reality to many observers is the extent to which small rural telephone companies have modernized their facilities.[1] Indeed, in many ways, as noted, these facilities are more modern than those deployed in rural areas by many, if not most, large telephone companies. Of course, small rural telcos have some advantages over the larger companies. Being smaller, they face fewer bureaucratic obstacles to innovation and can modernize their central offices by making smaller capital investments. However, these advantages do not offset the higher costs of serving rural areas because of higher loop costs and an inability to take advantage of economies of scale, even though many rural telcos have been innovative in aggregating demand in order to achieve scope and scale economies.

THE CASE FOR DIFFERENTIAL TREATMENT OF RURAL TELEPHONE COMPANIES

The main case for treating small rural areas differently in telecommunications policy is that rural and urban people benefit from connecting rural people to communications networks, and, under present conditions, rural differences could make competition by multiple providers unworkable. Specifically, the Rural Telephone Coalition (RTC) and others argue that the small number of customers scattered over large distances raise the cost of services relative to urban areas and preclude economies of scale. Under these conditions, fragmenting demand by permitting more than one provider would increase prices to consumers and make it difficult to support modernizing investments. Moreover, according to this view, subsidies to rural telecommunications providers are justified because the social benefits from rural telecommunications cannot be recaptured in the rates charged rural customers.

The evidence seems to support the rural advocates' position. There is no doubt that costs are higher and that conditions make it difficult to recover the cost of external (social) benefits from rural rates. This does not mean, though, that rural carriers should be allowed to ignore competitive pressures to keep prices close to costs. However, at least for the present, this probably can be done more effectively through incentive rate regulation than through competitive market forces. Similarly, very different forces and motivations serve to stimulate efficiency in small rural telcos. First, these companies are more interested in the development of rural areas than is true for larger urban-oriented companies, which are more likely to neglect rural areas in favor of more profitable metropolitan customers and investments outside their core areas. The rural telcos, by contrast, see their welfare more closely related to the development of their service areas. For one thing, coop telcos are owned by their customers, and therefore must be responsive to their concerns. Second, even noncoop rural telcos see their welfare closely related to the development of their service areas. Indeed, many rural telco managers and employees, like rural educators, are integral players in rural communities' social and economic affairs, and derive considerable pride and personal satisfaction from providing the best possible service through technologically advanced facilities. Many small rural telco employees and managers cooperate closely with rural schools, hospitals, and public institutions in implementing advanced telecommunications services to improve the delivery of education, health, information, and other public services. These companies are particularly responsive to the concerns of schools, not only because of the common belief that if they lose the school they lose the community, but also because of the growing recognition that the quality of education is a major determinant of success in the information age and is a major factor in the attraction and retention of rural professionals, businesses, and young people. Finally, rural telcos' rates are constrained by the threat of bypass by their largest and most lucrative customers, who, if they left, would raise costs for those remaining on the networks.

Michael Brunner expressed a view common to rural telco executives:

> Small rural providers are different. The manager or owner, and the directors, are part of the community. The employees are providing service to their families, friends and neighbors. The level of personal service and the sense of accountability are much greater (p. 62).

In addition, Brunner expresses a common rural attitude about competitive market forces:

> Federal policies and mechanisms, not the marketplace, have brought quality service to rural customers. The. . .REA, the Universal Service Fund, geographically averaged toll rates, the service franchise—all reflecting the governments' commitment to rural citizens are responsible for the development of telecommunications in rural America (p. 62).

North Carolina's experience with distance learning provides additional insights into the advantages, disadvantages, and costs of using telecommunications to improve education, especially for poor and rural students. A distinctive feature of this state's program is that, unlike many other states, the governor's office insisted from the beginning that poor and rural areas be included. North Carolina was sufficiently satisfied with a pilot program in 16 schools that in 1994 the legislature appropriated $7 million for start-up costs to take the program beyond the experimental stage. By January 1995, 100 schools were linked to a fiber optic system throughout the state. State officials estimated that a high school must spend $110,000 to $150,000 to buy the equipment and hook into the fiber optic system and another $40,000 to $50,000 a year in telephone user fees. In addition, schools had to hire extra employees to maintain the system.

The state has agreed to be the biggest user of the fiber optic system being constructed by a consortium of phone companies. High schools and colleges will be the system's main customers, though hospitals, government offices, and prisons also were expected to participate in the program. Businesses were expected to be willing to pay higher fees to use the system. While the North Carolina system was expected to provide lessons for use as it evolves, the state's business and political leaders were confident that their advanced telecommunications system would strengthen economic and community development, as well as improve the delivery of education, health care, government, and other services (Winerup).

Similar uses of telecommunications have strengthened rural development in other states, especially in Iowa and Nebraska, which, along with North Carolina, have been innovators in the use of telecommunications for education, medical care, government services, and rural economic development. Some 6,700 miles of fiber optics have been laid throughout Nebraska. This system is being used by state officials to sponsor numerous small-town experiments in telemedicine, education, and government services. In 1994, all but five of Nebraska's 93 county seats were linked to the fiber optic network. State officials prodded telephone companies and other businesses to invest in fiber optics, digital switches, and other advanced technology by promising to use the system as "the anchor tenant" if the companies would build it.

There is convincing evidence that telecommunications has contributed significantly to a developmental turnaround in Nebraska and other rural areas during the 1990s. In the 1980s, for example, 80 of Nebraska's 93 counties lost population; since 1990, all but 20 counties have gained population or have stabilized. While it is not possible to determine the role of telecommunications, since rural areas generally experienced renewed growth in the long economic recovery that started in the early 1990s, information technology appears to have been an important factor. According to Calvin Beale, an eminent rural development specialist at the Department of Agriculture,

> Advanced communication technology is starting to allow small towns to hold on to existing jobs and attract new ones.
>
> Every survey shows more people want to live in small towns than can find jobs there," he says. "If you wire them, they will come (Richards, p. A-1).

Health care

Telecommunications can do much to improve the quality of health care for rural Americans. Information systems can be particularly useful in providing health care education and information to help prevent health problems. Moreover, telecommunications can improve medical service by providing rural health care professionals with specialized assistance in distant places and bringing emergency medical care to rural residents. Interactive TV seems to have enormous potential to avoid the need to move patients to specialists. Rural general practitioners, nurses, and other health professionals can obtain specialized help from distant places to treat patients in rural facilities; and medical associations can establish networks to increase efficiency and improve health care by sharing patient information.

One of the largest stumbling blocks for telemedicine projects is the lack of acceptance of these services by third-party reimbursers, i.e., Medicare/Medicaid and insurance companies. In addition, costs for the equipment have been prohibitive for some of the smaller hospitals or individual physicians. Finally, public utility commissions have not been very flexible in facilitating the use of technology to improve the delivery of medical services in rural areas. For instance, Texas Tech's "MEDNET was prohibited from on-demand access to telephone lines . . . and was required to lease fully dedicated lines around the clock at considerable cost."

CONCLUSIONS

It is commonly assumed that bringing high-quality telecommunications to rural areas would be very expensive or require much larger public subsidies. However, with the use of more imaginative incentive regulations and competitive market disciplines, there is evidence that the basic objective of providing advanced telecommunications facilities to rural residents, businesses, schools, hospitals, and governments could be a plus-sum process whereby all parties concerned—as well as the national economy—would be much better off. Regulators should therefore test the following conclusion advanced by one group of rural telecommunications experts:

> It *is* economically feasible to provide broadband service connecting every telephone exchange in the country, including those in small rural communities, and narrowband access (for voice and data) for every household in the country. Broadband links for video and high-speed data can be provided wherever the business, educational or other applications require them.
>
> Universal access to high-quality telecommunications networks is not only affordable; it can be provided without tax dollars. Although large investments will be required, the anticipated profits should be sufficient to raise the necessary capital. Telephone subscribers, on the average, are unlikely to have higher telephone bills, except for increased usage. As the new investments lead to lower costs and increased usage, subscriber revenues will repay, over time, the costs of new investments. (Parker et al., p. 14).

Future policy gaps

What policy gaps are likely to remain if current policy is unchanged?

It seems to me that the main policy gaps for rural policy include the following, though, as noted, most trends are favorable for rural areas.

1. Rural Human Resource Development

As noted, rural schools have closed the gap with central cities, but not with suburban areas. Rural schools have special needs to improve their facilities and become fully integrated into telecommunications networks. The Clinton Administration Rural Community Schools Rebuilding Program is a good beginning and should be carefully evaluated with a view to expansion.

Course offerings and standards need to be improved. Rural schools compare favorably with central city, but not suburban schools. These gaps could be eliminated through the use of internationally benchmarked standards with matched assessments and curriculum guides for rural and urban schools. Standards would provide greater incentives for students and teachers, improve accountability, and promote systemic efficiency by improving the linkages within schools and between schools, businesses, and higher education institutions, especially community colleges. There is strong evidence that closer links between schools and high-performance companies could be mutually beneficial, as is the case, for example, in Germany and Japan. A system of standards for teachers, especially the National Board for Professional Teaching Standards, could do much to improve rural education, as it has in North Carolina, for example.

There is a special need to involve parents and community leaders in rural schools. This is so because rural parents tend to be less well educated than their suburban counterparts and because there is strong evidence that effective parental involvement improves student performance.

Rural schools have special advantages of being smaller and more integrated into community life. However, in some places, especially in the South, this is not so because of racial and social inequalities. A strong case can be made for special efforts by federal and state governments to improve schools in these places. In many rural southern communities the economic power structure is not interested in improving public schools because wealthy families send their children to private schools (Duncan). In some of these cases, as in Kentucky, the poorer school districts successfully sued the state government to overcome unequal distributions of school revenues. When ordered to do so by the Kentucky Supreme Court, the Kentucky legislature corrected the problem. However, "The fractured nature of the local policy among many rural Kentucky counties was most graphically evident when a majority of the representatives from the school districts that backed the initial litigation . . .that would benefit most financially in terms of the new money voted against the reform measures" (Swanson, p. 118).

In short, policies need to be adopted to strengthen rural education through standards and assessments to provide schools run by highly professional teachers and administration who have adequate facilities, resources, and rewards for significantly improving student achievement.

Policies also need to be developed to improve worker and managerial skills. Skills standards being developed by the National Skills Standards Board could do for skills what standards would do for schools. Policies need to be developed to overcome the training problems of small companies and the training externality problem for all employers.

Finally, policies need to be adopted to encourage more rural students to complete college education. High-performance development that increased the returns for rural education would enable more rural college graduates to remain in those areas and others to move or return.

2. Develop a Coherent Rural Policy Statement

I think another major gap is likely to be the development of consensus on some of the fundamental questions raised by the ERS 1988 Rural Development Report. This would be particularly timely if the Clinton Administration's place-oriented initiatives are successful. I think a strong case can be made that efficiency does not always require markets to be controlled by competitive market forces. As noted in the telecom case, people who are interested in developing their communities do not necessarily need the spur of competition to modernize and produce quality goods and services for their friends, neighbors, or cooperative owners. Moreover, shifting resources out of these areas to maximize short-run gains might not be in the interest of long-run efficiency. Moreover, consideration must be taken of the long-run problems for the environment, civic society, and competitive markets as the result of the growth of large-scale agribusiness enterprises which do not necessarily have production efficiency advantages over smaller, fully mechanized family farmers. Experience in the United States and elsewhere demonstrates the social, political, and economic value of social safety nets. Perhaps it is time to extend these nets to help family-sized farms with the inevitable periodic downturns in agricultural prices. Of course, many of these farmers could combine farm and nonfarm incomes to cause them to be viable.

Opponents of industrial policy have a point in warning against the dangers of protectionism and propping up noncompetitive industries or from trying to pick winners and losers. However, many of these critics have already decided that family-sized farms are losers, even though they prosper in other countries and have been damaged by our subsidies to land and capital. Moreover, proper sectoral policies would not require governments to "pick winners and losers," but to be sensitive to the differential impact of ordinary government policies on diverse areas as well as the multiplier effects of some industries—like education and telecommunications—on others.

Policymakers should therefore determine whether a consensus can be developed on the nature and components of rural policy that answers such questions as: why is a separate rural policy needed? What is unique about rural places? What are the differences between different categories of rural and urban places? How can national policy accommodate dynamic and diverse conditions as well as policies at the regional, state, and local levels? Why is it in the national interest to have a national rural policy? What should be the main elements of a national rural policy?

As demonstrated in this paper, I believe rural conditions are sufficiently unique to justify a national policy to address these conditions and promote rural development. I also believe rural development is in the national interest for many reasons, including the mobility of rural and urban people; the national interest in prosperous, democratic, socially cohesive conditions everywhere; the preservation of the rural environment for people everywhere; and the fact that rural problems become national problems and rural prosperity contributes to national prosperity.

I think the guiding principle for rural development should be to encourage high value added by encouraging the development of high-performance companies through education and training systems for frontline workers, enterprises and managers. A rural policy should create an environment that encourages the growth of high-performance enterprises. Such a policy would have safety nets to make viable enterprises sustainable during temporary changes in conditions over which people have little control. Rural policy should not give inordinate attention to agriculture, but should consider agriculture to be an important component of the rural and national economies. I believe there is more justification for safety nets for family-sized farms than there is for subsidies for large commercial farms. I also believe place-oriented policies have an economic as well as a social justification, but that these places are not likely to benefit from the kind of competitive market conditions that can produce positive outcomes in more populous markets.

These are more in the nature of guiding hypotheses than fixed conclusions. I believe consensus building requires a much better factual and analytical foundation than I have been able to assemble. I would therefore recommend that some organization—perhaps the National Rural Development Council—modernize the ERS' 1988 staff report.

ENDNOTE

[1] These small companies are generally referred to as telephone companies, but their activities have expanded beyond basic telephone service. The broader term, "telecommunications," would therefore be more appropriate. I use the term "telco" to refer to both.

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Rural America at a Crossroad: Discussant

Terry Jorde

Thank you for the opportunity to be here today. My name is Terry Jorde and I am President and CEO of CountryBank USA, an agricultural bank located in the small community of Cando, which is in Towner County, North Dakota. I am also chairman of the Community Banking Network for the Independent Community Bankers of America (ICBA) and a former chairman of ICBA's Agriculture/Rural America Committee. ICBA is the only national trade association that exclusively represents the interests of our nation's community bankers.

I want to applaud the efforts of the Center for the Study of Rural America in bringing this important conference together and for their ongoing work to highlight the current and emerging issues those of us serving rural communities are facing. We appreciate the leadership of Tom Hoenig, the president of the Federal Reserve Bank of Kansas City, for his commitment to rural America and we appreciate the leadership of Mark Drabenstott, the director of the Center, and the efforts and hard work put forth by his excellent staff.

In regards to our conference topic, *"Beyond Agriculture – New Policies for Rural America,"* perhaps I should begin by noting that the founders of my town—Cando—named the community as they did because they knew that in order to survive in rural North Dakota our citizens would need a "can do" attitude. Cando is an optimistic town; its slogan, which was developed at the height of the Great Depression, is "You can do better in Cando!" Even our little water tower on the edge of town carries that motto.

With only 1,400 residents there is little unemployment and even a housing shortage because we have had some success in creating new jobs over the past decade. New residents and displaced farmers have been attracted to the jobs in a pasta plant, a foundry, and at construction sites that include an assisted living facility, a medical center, and a health and dental clinic. Yes, our community has survived and prospered, as has our bank, although we have found that success in the rural development arena must often come by jumping over some very high hurdles.

Our local bank has served primarily an agricultural base for many years. We've tried to diversify our asset base and sources of income so that we are not solely dependent on agriculture. We have branched into a neighboring community, invested heavily in technology, and aggressively worked to diversify our revenue sources by adding investment and insurance services in the bank. In fact, my bank's strategies can be summed up in three words: growth, diversification, and technology. This has helped us spread our risks.

But spreading our risk isn't the only answer. Creating new wealth is the answer, and no one has figured out how to do that consistently yet in rural America. Dr. Marshall makes a good point in his paper where he discusses the necessity of utilizing "value-added" strategies.

I know that you've all seen headlines in the newspapers about the difficult times down on the farm – times made *less* difficult by massive infusions of government financial aid the past couple of years. Despite the welcomed financial aid, many farmers have been left to wonder just how long the fundamental problems will last. Likewise, many people wonder what impact the wave of economic concentration in agriculture will have on those who grow the amber waves of grain across the American heartland.

I would disagree with Dr. Johnson when he contends that rural communities today are not dependent on farms. Farm income as a percent of nonfarm income is low because farming is generally unprofitable. However, as these farmers leave our communities there are fewer people to support the companies that create the off-farm jobs.

THE SPECTER OF DEPOPULATION

Rural America has already witnessed a significant loss of population from many rural communities. My county alone lost 17 percent of its population from 1990 to 1998. The FDIC's first-quarter report on the Kansas City region recently highlighted these troubling trends.

Only about one-quarter of the 400 rural counties studied were growing. The counties that are not growing, but rather losing population, are largely reliant upon agriculture. If these numbers are representative of the situation facing rural counties across America, then we have a major problem on our hands that truly does go "beyond agriculture."

Dr. Johnson's paper discusses similar statistics from USDA and other sources that highlight the loss of rural population from counties.

Unfortunately, depopulation and being an agriculturally oriented county seem to go hand in hand, which raises the question: "What can we do to keep people in rural areas now dominated by agriculture?" Because ultimately keeping our people, our leaders, our workers, and our citizens is essential to keeping a healthy social infrastructure intact, which is the only way we will be able to diversify our local economies.

Maintaining the social infrastructure in terms of human resources is key to maintaining a viable physical infrastructure–adequate roads, schools, health care services, utilities, Main Street businesses and, yes, locally owned community banks focused on meeting local financial needs.

The implications of a smaller, older population in many of our rural communities ultimately mean a smaller tax base to support our rural infrastructure and our rural fabric of life. Depopulation means fewer leaders to keep alive vision and hope in our rural communities.

This concerns community bankers because we know that it takes numerous gifted individuals committed to their local employers and local businesses to keep their community viable and growing. We know from experience that larger farms and larger corporations have less reliance on their local rural economy for their inputs and financing.

Maintaining a stable population base in rural areas is also important because many demographers argue that there comes a point where the populations of communities can ***fall below a critical mass and become destined for an irreversible decline***, lacking the human resources needed to remain viable. The per capita cost of providing services becomes too expensive.

The consequences for the banking industry can also be stark. They include: fewer depositors and borrowers, lower growth rates, and more risks in loan portfolios due to less loan diversification; also more expensive funding sources as banks increase their dependence on nontraditional funds in the place of traditional core deposits; and of course even greater consolidation of the banking industry, which means fewer financial choices for rural residents.

EXPERIENCES OF A COMMUNITY BANKER

In a small community you can wear many hats. I find myself being not only the president of our $32 million bank, but also a mother of three, a partner in my husband's family farm, and a community development leader. As a community banker I have felt it is essential to take an active role in promoting growth in our community, which is why I also serve on Cando's economic development board and on the community-owned hospital board.

I have been reminded on numerous occasions of the importance of economic growth and that growth would be impossible without a quality health-delivery system. In fact, a community banker needs to wear their community-development hat to keep the town's overall economic base wired together. If our community isn't growing, neither are we.

We have tried to diversify Towner County over the years. Before the recent plummet in grain prices, Towner County was the largest durum-producing county in the United States. Durum is the specialty wheat used to make pasta.

Twenty years ago, very little durum wheat was milled in North Dakota. Now, 10 percent of all U.S.-produced durum is being milled there as a result of efforts by development leaders in my area to build value-added pasta plants. Our bank participated in a loan to build the first totally integrated pasta plant in the nation. Plants such as this one have created nearly 500 jobs in the pasta industry in my area. So this is an example of how one community pursued the value-added strategy.

Cando has an economic development group called the Durum Triangle Development Corporation. There are 12 members on the board, and two of my bank directors are on it. The president is from the local rural electric cooperative, and we also have other members representative of the community, such as the high school principal, the hospital administrator, the hardware store owner, and the other bank president in town. We meet every month. Then, we break down into smaller working groups to accomplish the goals we set for the projects. We can work for two years on something before it reaches fruition.

We've also worked with other local lenders (yes, competitors) to attract a new foundry to our community, which was an expansion of a Canadian business that we convinced to locate from across our Canadian border. We showed them why they should locate an American plant in Cando. We brought lots of people together from our community with various types of expertise—two bankers, an attorney, a state legislator, and the president of the electric cooperative. They opened for business a few years ago with 87 employees. Those kinds of projects have been rewarding.

Success requires the active involvement of a number of our community's leaders. In fact, the owner of the business is fond of saying, "A 'posse' from North Dakota came across the border and kidnapped us!"

We've also participated in a major hospital loan to provide leading edge health care facilities. This essential project was a $3 million renovation of the Towner County Medical Center. The hospital was on the verge of closing. Then, the community assumed ownership. With the expansion and remodeling, the hospital came into compliance with all federal, state, and local standards dealing with handicap accessibility and fire and life safety standards. In only five years the Medical Center made at least a 20-year leap in medical technology, bringing all of our equipment up to current standards.

Now the medical center has three board-certified family physicians, two physician's assistants, one dentist, a rural health clinic and dental clinic, two satellite clinics in nearby rural areas, and consolidation of duplicated services like laboratories and x-ray technology. The new building includes a five-physician clinic, a two-dentist clinic, new labs and radiology suite, a new trauma and emergency suite, a new cardiac rehabilitation and physical therapy area, and a state-of-the-art birthing suite. The hospital is also a surgical facility and has 22 beds. Only a few years ago our hospital was a candidate for closure, but with our community's involvement, today Towner County Medical Center has become the standard for rural health centers.

But let's face it. If we are going to keep people in rural areas, our communities have to have entertainment and culture, not just farms and businesses and hospitals and schools. With that in mind our bank became the lead lender for a local restaurant that serves hearty fare ranging from broiled Gulf shrimp to thick slabs of corn-fed beef. Our bank also helped save the local movie theater located within a multiuse facility that now serves as a movie theater and an arts center that stages musical comedies and dance recitals. CountryBank USA provides use of its community room for free to nonprofits and at a nominal fee for for-profit groups and activities.

Many banks can provide ATMs, credit cards, checking accounts, and loans. We believe what enables our bank to make a difference is our staff and our commitment to the people in the community who are our friends and neighbors, and hopefully our partners in prosperity.

These three businesses alone provide over 300 jobs in our little town and they provide a substantial impact on the outlying communities as well. People drive into Cando from up to 40 miles away to work. In fact, our success created another challenge for us—affordable new housing. But that's a good challenge and one we've taken very seriously. Recently our bank got active in secondary market financing and just last month was one of only four banks in our state to receive a "Champion of Affordable Housing Award" from the North Dakota Housing Finance Agency.

But, we've also had our share of projects that didn't work. We lost our car dealership in 1995. The week before we were to transfer ownership to a new owner, General Motors publicly announced that they were closing many dealerships in the Heartland of America because profit margins weren't high enough. They refused to allow the franchise to transfer to a willing buyer.

THE "CAN-DO" ATTITUDE IN ACTION

When we sit down to look at a new business idea, we first take our banker's hat off to see if the project makes sense. We ask, "Can we do this—does it make sense?" If it does, then we put on the banker's hat to figure out how to structure the debt financing.

We've learned that not all of the debt financing has to come from the bank. There are lots of programs that can be leveraged to bring financing to a project. But we've also learned that equity capital is in short supply, especially in rural areas. This is one of the great challenges to our future. In fact, it is a challenge made even greater in light of the fact that the potential for future growth of economic wealth in our economy will likely come from technology businesses. There's lots of capital for these businesses in Silicon Valley, but not much available in the Red River Valley.

And, you might think with such a small population that we would be the only bank for miles, but there are two others in Cando and a dozen within 40 miles. Competition is keen. Our deposit rates are much higher than those in larger cities, meaning it costs us more to raise the money to finance projects and loans in our community.

As with many rural banks, our depositors are older and when they die, their deposits are inherited by children who live in larger cities. We are losing more deposits than we are creating. A stable funding source is very important to us, which is the reason we've supported ICBA's efforts to access capital-market funding through the Federal Home Loan Bank and other GSEs.

DOUBLING DEPOSIT INSURANCE AND INDEXING IT TO INFLATION

Funding is a crucial issue, both to the survival of our rural banks and the survival of our rural communities. That is why community bankers are pushing for a doubling of current deposit insurance to $200,000 and indexing it to inflation. We are also strongly pushing for 100 percent coverage of municipal deposits to ensure that these local funds remain in community banks. Municipal deposits are taxpayer funds and they should not be placed at risk.

Deposit insurance was last raised in 1980 and has eroded to one-half its value in real dollars. Raising it will help keep our local citizens invested in rural America and help us maintain our core deposits, which are the primary source of funds for community lending. A dwindling core deposit base hurts the entire community. We need to keep local dollars in our local communities.

At ICBA's annual convention last month, FDIC Chairman Donna Tanoue—speaking to a packed room of more than 1,100 community bankers—told us that that the FDIC would undertake a comprehensive review of the nation's deposit insurance system, including whether deposit insurance levels should be increased, and whether new, rapidly growing or large banks should pay more in insurance premiums.

Community banking welcomed her message. The ICBA board of directors decided that pursuing an increase in deposit insurance would be one of our highest priorities moving forward. Deposit insurance is the long-standing bulwark of our nation's financial system. It is the financial safety net that not only protects insured depositors, but also ensures stability in the system that supports the nation's economy. It also helps keep and attract core deposits to community banks.

Today's insurance levels amount to only four times per capita income levels. When federal deposit insurance was established in 1935, the nation's depositors were covered at more than ten times per capita annual income. Deposit insurance is key to your bank's ability to continue to compete for core deposits, which enables your bank to lend to local businesses, farmers, and other consumers.

It was only ten short years ago that banking generally faced a crisis characterized by hundreds of bank failures and thousands of problem banks. But Congress will not allow Citibank, or Bank of America, or the Farm Credit System to fail. Big banks have a "too-big-to-fail" status and the FCS, as a government-sponsored enterprise, has the implicit backing of the federal government as we saw in the bailout of the 1980s.

So I ask you—doesn't it make sense to ask Congress now for an increase in deposit insurance to keep up with the protection our rural citizens had 20 years ago?

Such increases in federal deposit insurance levels would better protect community banking, better protect our depositors, keep core deposits in community banks serving rural areas, and help stabilize the future financing of rural America.

The FDIC plans to publish a set of recommendations for change in July. Congress will have to vote to pass legislation to raise the deposit insurance levels. We expect legislation to be introduced in both houses of Congress this year that will help pave the way for consideration in the next Congress. ICBA and your community bankers would welcome your support.

GROWTH—THE GREATEST CHALLENGE

The growth of our community is the greatest challenge we face at the bank. We have to keep the community strong to keep the bank viable. We've got to have moderate growth to pay our overhead and pay competitive salaries to keep good people working with us. We need to be able to invest in technology to compete with our big city brethren. Growth is the catalyst for the bank. When we experience growth at the bank, we see it in our community.

Most community bankers believe as I do, that our role in the community is to help set the pace for progress and growth and community development, and to maintain an optimistic and positive outlook on behalf of our rural communities. It's important to do community development and work on financing the loan packages that make dreams become realities. These dreams and realities depend on keeping the rural infrastructure wired together. Because if the infrastructure breaks down the community dies.

A NEW AGENDA FOR RURAL AMERICA

When the ICBA testified before the House Agriculture Committee in March, Jim Caspary, our Agriculture/Rural America Committee chairman discussed ideas for the next farm bill in terms of ICBA's "Comprehensive Proposal to Strengthen the Farm Safety Net," which was sent to Congress in January of 1999. But in addition he stressed that as the next farm bill is being written, which most likely will not begin in earnest until next year, Congress needs to begin including broader rural economic development policies into the legislative mix. He mentioned this particular conference and its potential for laying the groundwork for these future policy discussions.

I think the framework laid out in the Center for the Study of Rural America's first policy paper, "Rural America in a New Century," is a thoughtful piece that highlights several possible directions.

These include unleashing new economic engines to help rural entrepreneurs establish new businesses and bridging the "digital divide" with an adequate digital infrastructure in rural areas. The paper noted the need to provide traditional public services especially where population and tax revenues are declining. The previous conference explored the issue of bringing more equity capital to rural America. Another important issue will be addressing how we can help our rural communities adapt to the emergence of the so-called "supply chains" dominated by large corporations and larger, but fewer, farmers.

How do we unleash new economic engines to help rural entrepreneurs establish new businesses? How do we bridge the "digital divide" and provide an adequate digital infrastructure in rural areas? Dr. Marshall's paper presents some helpful policy ideas. The future conferences that the Center organizes could play a crucial role in helping to answer these types of questions.

HOW MIGHT CONGRESS RESPOND?

Congress might also respond to rural America's changing needs in a variety of ways.

Improving access to technology

It appears that Congress is already beginning to grapple with some of these questions from a legislative angle. For example, both houses of Congress recently passed a rural TV bill designed to bring local TV programming into local markets. Several bills designed to make Internet and broadband access more affordable have been introduced, although they utilize different approaches. Some would use tax credits while others advocate low interest loans to encourage companies to expand to rural areas. Broadband Internet service is in its infancy in the Northern Great Plains but is expanding quickly in larger population centers where larger populations promise better returns on the investment that companies make. But this type of service is essential to spurring rural entrepreneurs to locate in rural communities while at the same time being connected to the rest of the U.S. and the rest of the world.

Spurring small business start-ups

The House Banking Committee recently passed a bill to establish the American Private Investment Companies program to target investments to low-income areas. APIC would provide for-profit private venture capital firms with access to federal government guarantees of company debentures if they supply at least $25 million in private equity capital and focus their efforts on low-income neighborhoods as determined by the Census Bureau.

Obviously, we could ask, why not design a program similar in concept targeted to rural areas?

Expanding and targeting business development programs

We should also look at our existing programs to see how they can be improved. For example, perhaps we should revisit the USDA's business and industry (B&I) loan program. The program has a typical loan size of $1.5 million and it always seems to have a backlog of applications. Perhaps this program needs to be better funded with provisions to target some of the additional funding to smaller businesses, recognizing that oftentimes in a small community small business development doesn't require a big investment.

This may also be an opportune time to see how the SBA small business loan programs can be used in conjunction with the B&I loan program. Perhaps USDA could help deliver the SBA program for smaller loans through its many local field offices. Many community banks feel the fees for SBA loans need to be lowered. We should review all of these business-oriented programs to see that they are being administered in a user friendly and cost effective manner.

Giving policy direction to Congress

A fundamental question is what models work in rural America the best? The Center's work may help provide an answer. Hopefully there will be growing interest in legislation designed to solve the unique structural problems that face our rural communities. A key question will be how to design possible legislative solutions. Congress will need to examine what approaches have worked well in the past and what lessons have been learned from both the success and failures.

Going beyond farm policy

Many of you may be able to help Congress decide what types of incentives are necessary—for example, loan guarantees, low-interest loans, tax credits or tax-deferred plans, or revolving loan funds. Do we need new pilot programs or combinations of all of these ideas? Our objective should be to provide the proper economic environment and an adequate mix of tools and incentives for companies to locate in rural America and bring their jobs and services to our rural citizens. We may need to explore how federal agencies can work together better to eliminate duplication and streamline the programs they provide in addition to simply looking at providing new programs. Your ideas and expertise will be most helpful in terms of shaping future regulatory and legislative remedies.

Diversifying our rural economies and maintaining our rural population base will take more than a new farm bill, important as that most assuredly will be.

That's why as a community banker I really appreciate the presentations of Dr. Johnson and Dr. Marshall in laying out some of these challenges and possible solutions. Both presenters have suggested that Congress, under its current structure, may find it difficult to offer a comprehensive rural policy approach since the jurisdiction for rural issues is now so divided. I concur with their views.

Doing no harm

Since community banks are also small businesses themselves, we must remember that proposed solutions should not invite the heavy hand of government to distort the marketplace. In other words, small businesses should not be crowded out of providing products and services by government agencies or government-sponsored enterprises. The government's role, whether through a federal or state agency or through a GSE, should be complementary to the role of community banks. Proposed solutions should ensure that existing local businesses are empowered to better assist our rural citizens, not replaced in lieu of other providers who may not be tied to the community. Otherwise we create a downward spiral of problems by further reducing the local tax base of rural communities.

CONCLUSION

I mentioned earlier in my remarks my own personal experience in Cando, North Dakota, and the ongoing problems many rural counties are experiencing as a result of depopulation.

What I didn't mention is that I was a transplant into rural America from a suburban life in Chicago and Minneapolis. Instead of an "out-migrator" leaving rural America, I became an "in-migrator" who has found a rewarding and fulfilling life in a small rural community . . . and perhaps more opportunities and more excitement than I could have ever found had I stayed in a suburban environment.

I believe this type of story can be repeated every day in rural America if we have the right tools to work with. Rural America is more than a nostalgic painting by Norman Rockwell intended to capture memories of a day gone by.

We can keep our young people in the Heartland and we can attract quality people to our rural communities. Again, we may need an improved arsenal of tools in terms of new and better policy initiatives. It may not be smooth sailing all the way—there are waves and storms on any long voyage.

Given our close proximity to the great state of Kansas, the namesake of this region's Federal Reserve Bank, perhaps it would be best to keep that state's motto foremost in mind as we move into this uncertain, yet promise-filled future—*Ad astra per aspera*—which, translated, means: "*To the stars through difficulty.*"

May the work begun here, shine brightly upon the future of rural America for decades to come.

Thank you very much.

Rural America at a Crossroad: General Discussion

Moderator: Alan Barkema

Mr. Barkema: Now we have time for another session of questions from the audience. To enable us to get as many ideas on the table as we possibly can, I'm going to group the questions into groups of two's or three's and then present them to our panel. We'll begin right here, sir.

Beau Beaulieu, *Southern Rural Development Center:* Demographers are suggesting that over the course of the next 25 to 50 years the greatest growth in rural America will take place among our minority populations, particularly Latinos and African-Americans. And Dr. Marshall, as you talk about human resource development policy, which I think most of us would embrace as being critical, these are the populations who have probably had the most difficult time with regard to the human capital endowments. Do you or Tom see any specific human resource development policy initiatives that would have to be uniquely shaped to address the needs of these particular population groups?

Mr. Barkema: Let's take another question. Let's get another question on the table here.

Ron Wilson, *Huck Boyd National Institute for Rural Development, Kansas State University:* Terry, I appreciate your translating that Latin for us. We have a tough time in that. I'm intrigued in the concept of the electronic distance that was described this morning. I think it's a really crucial issue for the future of rural America, and I wonder if there are any policy prescriptions that you all might suggest to help us bridge that gap to help deliver greater broadband access in rural America.

Mr. Barkema: Let's take one more question, right up here.

Robyn Henderson, *National Rural Health Association:* I guess this is more of a comment and piggybacks on the previous question about the information infrastructure. I was pleased to hear Ray talk about the use of cooperatives in rural areas, not only to bring in telephone services, but certainly the rural electrification process. And I would suggest that as a model also for bringing in infrastructure working either through the electric cooperatives or public power districts, as is the case in some states, as well as the telephone cooperatives. It is a model that has worked well for the last 60 years, and it may be a partial solution or model for the next 60 years.

Mr. Barkema: Thanks for that comment. Well, we have two issues on the table. First of all, a question of whether or not there are specific human resource development issues that might be targeted at the minority population, which is growing very rapidly in some parts of the country, and second, a question of how we can deliver broadband access to rural America. So, Ray, why don't you tackle the first question?

Mr. Marshall: The answer is, yes, there are things that have been done and can be done to dramatically improve education for minorities in rural America. There are a couple of models that I have found very useful. One was Jim Comber's model, developed actually in New Haven, Connecticut. I would say everything that I pointed out about the need for a high-performance school applies to delivery of educational services to minorities.

In fact, I chaired a committee on minority education for the Carnegie Corporation. We put out a report called *Education That Works,* where we dealt with that basic issue. Essentially, I'd put it into two parts. One, minorities need many of the same kinds of things that anybody needs in education. You need to have education to high standards, in particular for the core courses, and our core courses are math, science, language arts, and applied learning. We call it "applied learning" and not "vocational" because too many vocational programs were watered-down programs that assumed that you didn't need to have academic subjects.

Now, in addition to those things, though, you need to understand the needs and culture of the people you're dealing with to be able to deliver education services. If you don't do that, then you violate one of the fundamental principles of learning. Learning is based on students, it's based on expectations, and it's based on their belief that you expect them to learn, and that you understand where they are.

Jim Comber called this, in dealing with African-American students, "cultural discontinuity." He said that you're never going to be able to reach those students until you overcome cultural discontinuity. It means even though the teachers were black and the students were black, they were from vastly different cultures. So, the teachers couldn't understand the students and the students couldn't understand the teachers. And bringing the parents and the community into the school, focusing on student achievement, the model that Jim Comber started has been able to take some of the worst schools in New Haven and make them some of the best. When you ask him what he did, he will say we did two main things besides overcoming cultural discontinuity.

In many of these communities, you've got to change attitudes. Well, what does that mean? It means that many young people are programmed for failure from birth. Nobody believes they can learn. Their parents don't believe they can learn to high standards. That's one of the reasons for this experimental program in Port O'Connor, is the teachers didn't believe they could learn, and the kids didn't believe they could learn. And cognitive science tells us that when you get that combination no learning will take place.

So, in order to really give a good education, you've got to meet the core standards, but then how you do it—the curriculum, the teaching approaches—has to be geared to the community that you're trying to deal with.

Mr. Barkema: Thank you, Ray. Let's move on to the second important issue that has been a recurring theme this morning, and that is, how do we bridge the digital divide in rural America, how we provide broadband access? Tom, why don't you tackle that first, and then other panelists, feel free to join in.

Mr. Johnson: One of the advantages of lumping the questions together is that it increases the chance that at least one of them I can answer. I don't have an answer for this particular question on the electronic distance.

I think that it would be a mistake, a very serious mistake from the national point of view, to take a step that reduces the rate at which information technology is introduced and innovated in the country as a whole. And, it would be very easy to create a regulatory environment, very stringent requirements that would reduce the rate at which we innovated in this area.

But, I think, on the other hand we cannot depend entirely on the private sector because of the very important economic imperatives of scale and critical mass to bring information and communication technology to rural areas faster. So, it's going to take cooperatives, it's going to take partnerships between the public sector and the private sector. Beyond that, I'm afraid I don't have specific answers.

Ms. Jorde: We're very fortunate, even as remote as we are in North Dakota, that we've had fiber optics for a long time. Our bank has one branch and we have a T1 line that runs between both locations. All 25 of our employees and insurance agency staff have computers that are online through DSL access to the Internet all the time. But, we pay over $4,000 a month as a $32 million bank for telecommunication services. For the T1, we're paying 15 cents a minute for long distance service, and we are bearing the costs—probably more than our fair share of the costs—of the development of those types of that access. We're fortunate that we have it, but we're paying too much for it, and we're subsidizing the rest of the community that really needs to be online.

Mr. Barkema: Ladies and gentlemen, I'm afraid that will have to be the last word for this morning's session.

As you are well aware, our luncheon speaker today is Chairman Alan Greenspan of the Federal Reserve. Chairman Greenspan will be joining us by live video, precisely at 12 noon today. And, we have no leeway whatsoever in that time schedule. That's the way satellite linkups work. Our luncheon is in the room immediately behind me. So, I would ask you to assemble in the luncheon room no later than 12 noon for Chairman Greenspan's address. The luncheon's main course will be served immediately following Chairman Greenspan's remarks.

Thank you very much for your excellent engagement and participation in this morning's discussion. We are recessed.

The Outlook for Rural America in the 21st Century

Alan Greenspan

I am pleased that my good friend, Tom Hoenig, the president of the Federal Reserve Bank of Kansas City, invited me to speak to this group on the challenges facing our rural economy in the 21st century. The Kansas City Reserve Bank has long maintained a special commitment to monitoring developments in this segment of our society and has most recently demonstrated that commitment through its creation of a new research unit, the Center for the Study of Rural America. The new unit is much appreciated by those of us in Washington who have always looked to the Reserve Banks to provide in-depth field coverage of our complex and ever-evolving economy.

Rural America and its relationship to the broader economy has changed enormously over time. A century ago, rural towns and villages were isolated by the high costs of conducting transactions across large distances. Goods were bulky, transportation poor, and lines of communication to points outside the local area primitive. About a third of the American people lived on farms, which at the time were relatively self-contained economic units that purchased little from outside and consumed on the farm a good bit of what was produced. Life in rural areas tended to be stable but not very prosperous. By today's standards, incomes were low, services minimal, and opportunities limited.

Technology changed all of that, as farming and the other resource-based industries in rural areas were altered by the past century's great waves of invention and innovation. The rise of the petroleum industry transformed the energy base of agriculture from that of animal and human labor to a system driven by gasoline and diesel fuel. Mechanization of agricultural processes, which had been pushed ahead earlier by the cotton gin, the steel plow, and the reaper, now was powered by the tractor, the combine, and a host of other types of farm machinery. Discoveries in the use of chemicals helped in plant nutrition and pest control, and the introduction of new crop varieties, such as hybrid corn, boosted yield potential enormously. Perhaps just as important, principles of organization and management that had proved successful in industry were increasingly applied to farming operations.

Agricultural productivity rose dramatically as a result of the combined and cumulative effects of these innovations. Crop yields, in particular, started to surge about six decades ago, when the effects of a number of innovations seemed to converge. Apart from fluctuations related to weather, national average corn yields had been remarkably stable at roughly 25 bushels per acre from the time of the Civil War to around 1940. But by the latter half of the 1970s, the average yield had quadrupled, to more than 100 bushels per acre, and it since has climbed further, to more than 130 bushels. Wheat yields, which had seldom exceeded 15 bushels per acre in the three-fourths of a century leading up to World War II, thereafter turned up sharply, and they have climbed to more than 40 bushels per acre in some recent years. Yields of other major crops also accelerated. Overall farm productivity sped up enormously, and its growth since the second World

War has far outstripped the growth in output per hour in the rest of the economy.

The sharp rise in output per worker created large excess supplies of agricultural labor and led to a huge migration of farmers and farm workers from agriculture to other industries. Similar developments were at work in other resource-based industries, such as the mining of coal, copper, and iron. As workers in agriculture and the other primary commodity industries declined in number, many of the smaller rural villages and trade centers that had formed when earlier, more labor-intensive technologies prevailed were no longer viable as commercial centers. Spatial arrangements in rural areas shifted toward larger market centers that were farther apart, a move that was helped along by improvement in transportation technologies and the development of the modern highway system.

A hundred years ago, no one could possibly have anticipated the implications for rural America of the innovations that were emerging. Indeed, if rural citizens had known only of the dislocations that were in store—the migration of millions of workers and the eclipse of many small towns and villages—they would have been deeply incredulous. They surely could not have anticipated the diversity of modern rural America, tied to a broader economy through linkages provided by electricity, highways, and modern communications. Most of all, those rural citizens of a hundred years ago would likely have been astounded to realize that, despite all the dislocations, huge increases in the standard of living would take place not only in the cities but in rural areas as well. Yet that is what happened.

The fact is that in rural America as a whole, the nonfarm population and the level of employment have increased substantially over time, more than offsetting large declines in farming and the other resource-based industries. Growth in manufacturing created many new jobs in rural areas over the decades following World War II, and more recently, many rural places have become home to service-based industries. For all counties that are labeled nonmetropolitan by current definitions, population is about one-fourth larger than it was in 1960, and that does not take into account the very rapid growth in counties that were rural in 1960 but have since been absorbed into expanding metropolitan areas. Moreover, although growth of the present rural areas appeared relatively sluggish in the 1980s, there is little doubt that it has picked up this past decade. Rural communities close to the metropolitan areas continue to be among the faster growing places in our strong economy, but stronger-than-average growth also has been reported in many other rural places, especially those with attractive amenities that are much in demand among today's workers.

For an understanding of how so much dislocation could take place this past century and the result still be general improvement in the standard of living, we must look to the process of creative destruction that guides the evolution of a free and open market economy. Invention and innovation are constantly at work to replace the old with the new; to reduce the costs of materials, labor, time, space, and overhead; to alter the mix of goods and services or the mix of jobs; or to shift the locations of economic activity and populations. And out of this change has come economic advance.

Now we are in the midst of yet another great wave of invention and innovation, and rural America, like urban America, is certain to be swept along. Unfortunately, it is extremely difficult to predict how the comparative advantage of different industries and regions might ultimately change in response to broad shifts in technology. History provides ample reason for us to be cautious in this regard. For instance, electricity—like the new information technologies—was once viewed as a potentially decentralizing technology, and in many respects it was. But in conjunction with innovations that were taking place at the same time in other industries, such as steel, electricity also unleashed some forces that were strongly centralizing. For one thing, it brought increased efficiency to factories, which by their nature pull together in one location many economic functions, and the greater factory efficiency translated into lower costs and expanded markets for the centrally produced goods. Steel and electricity also combined to produce the modern urban skyscraper, steel providing the framing to go higher than in the past and electricity providing the means of elevating people from the ground to the 50th floor.

The central cities that factories and skyscrapers did so much to create continue to exert a powerful gravitational force on the economic landscape, even as manufacturing itself has spread out more broadly. Part of the gravitational pull of the cities comes from having concentrations of population that are sufficiently large to support highly diverse mixes of personal and business services. Moreover, the computer and the other new technologies are introducing economies of scale in the ability of firms to process large amounts of information about their internal operations or the characteristics of their markets. The lower cost of collecting and processing information will help businesses that are centrally located to reach further into rural markets.

But reduction of economic distance works two ways, and the information technologies that are bringing increased competition to rural markets are also working to create new opportunities for the businesses that are located in rural areas and incentives for those contemplating new rural business opportunities. One important change that has come with the new technologies, for example, is an increased capacity for separating the point at which a service is consumed from the point at which it is produced. Thus, business locations that might not have been feasible in the past because of their distance from central markets are becoming increasingly attractive in light of the new technologies. That, together with some basic cost advantages, no doubt helps to explain the recent rapid growth in a number of rural areas. The standard of living in rural places also is being enhanced by technological changes that are expanding the menu of consumption possibilities. Rural citizens are gaining access to a broader range of goods and services, and the already existing goods and services are available more expeditiously and at lower cost. Goods that have been around a long time are appearing with more options than before, and new goods and services are continually coming on line. Among the latter are many electronic products, such as satellite television, that have helped to counter the remoteness of many rural places. Remote locations also stand to benefit from innovations such as telemedicine, whereby expertise that is centrally located can be effectively transmitted to distant locations. Similar arrangements presumably are being developed, or considered, for many other types of services and should add to the quality of life in areas in which populations are too dispersed to support an indigenous supply of services.

Agricultural production, of course, for the foreseeable future will continue to be located in rural areas that are more distant from the central markets—it must be that way as long as the population is ultimately dependent on crops that require huge spaces. But as everyone in this audience knows, technological change and cost reduction are greatly altering the position of the farmer in the chain of production. Many livestock operations have become more like factories, with increased dependence on flows of information, tighter control over product quality at all stages of production, and greater standardization of output. Crop producers are turning to innovations such as electronic technologies, including those linked to satellites, to attain greater precision in planting, irrigation, fertilization, and weed-control. Genetic discoveries that should raise productive potential for both crops and livestock are being reported with great frequency.

All of these changes in farming technology and organization have implications for the size of the farm population and the structure of rural economies. Most indications point toward still further reductions in the number of commercial farms and increases in their size. However, new technologies also should continue to create profitable opportunities for smaller farms, as alternative uses for agricultural products are discovered and developed. Meanwhile, expansion of agricultural service industries should be a source of continued economic and employment growth in many rural areas.

The reductions of effective distance that are coming with the new technologies do not stop at our nation's borders. Farmers today are highly dependent on exports to absorb their remarkable productivity, and the ability to compete internationally depends on lowering unit costs faster than costs are being lowered by producers in other countries. Given the institutions that our nation has developed for pushing agricultural innovation ahead at a rapid pace and spreading information about new innovations quickly throughout the farm economy, U.S. producers are well positioned on this score. However, efforts to increase the openness of foreign markets for agricultural products will need to be maintained and intensified, so that the full benefits of farm productivity gain can show through into increased market opportunity and farm incomes.

Quite apart from the effects of a changing farm economy, rural towns and villages are likely to experience, within their local jurisdictions, a good bit of change in economic structure as a result of the new technologies. Many small and medium-size towns have seen their local business centers shift in recent decades from downtown locations to fringe areas that have an abundance of parking and can accommodate warehouse-sized outlets. Now, the distributors that have been successful on the outskirts are facing new challenges from information technologies that squeeze the costs of distribution down to bare minimums, effectively bringing the producer and consumer into closer economic proximity. In response to competition from new sources, some traditional distributors have moved quickly to implement electronic linkages that complement their bricks-and-mortar outlets. Other distributors are lagging and may ultimately have difficulty competing. With communications linkages tightening, businesses that are seeking a location in which a supply of dependable workers is readily available can more easily gather information about distant rural locations than in the past, and energetic rural communities with access to the Internet should find it easier to make themselves known to firms that are seeking a place.

Like all the previous episodes of technical advance, the revolution in information technology already has improved living conditions in numerous ways, and it will likely bring future benefits to rural communities that we now can only scarcely imagine. The benefits are perhaps most striking for those who are fully in tune with the new equipment for processing information. But the consumer who has never touched a computer or thought about information technology also is seeing beneficial effects, in the form of lower prices at the grocery store or other retail outlet than would otherwise prevail. Through channels such as these, efficiency gains get diffused widely throughout our economy, resulting in a broadly based increase in living standards. Although dislocations are bound to accompany economic growth, we should not shrink from accepting the changes that technology will bring but rather should rise to its challenges and look forward to the great benefits that it can provide over time to all our people, whether they live in congested urban areas or in the still-open spaces of rural America.

Investing in Rural Infrastructure

William F. Fox and Sanela Porca

Improved rural development has often been associated with greater capital investment, the application of science to production, better economic organization, and in some cases effectively, urbanization. Some have made the leap into asserting that rural areas would be well positioned for rapid economic growth if only they had infrastructure which was competitive with that available in many urban places. The notion is that infrastructure is public capital investment that will make private capital investment more productive. The expectation is that improved water, better electricity, lower cost transportation, and augmented information infrastructure in rural areas can allow firms to be more productive and to operate at lower costs. The resulting productivity gains are expected to increase overall economic activity.

A range of tools can potentially be used to make rural areas more economically vital. The challenge for policymakers, functioning with limited resources at their disposal, is to select the mechanisms that are most efficient for stimulating rural economies. In this way, infrastructure is best seen as one of the competing means for enhancing rural economic environments. That infrastructure has a role in a prosperous economy can easily be seen. Water, electricity, telecommunications, and other infrastructure are obviously imperative to business development. The main question being addressed is, should infrastructure investments be used prospectively to stimulate economic growth, or should they be expected to accommodate growth that is otherwise occurring? The search for an answer to the question is this paper's goal.

The paper is divided into five sections. The first provides a definition for public infrastructure. Next, the role that infrastructure improvements play in economic growth is conceptualized. The following section provides a review of the empirical literature on whether infrastructure stimulates economic growth. The fourth section summarizes the existing condition of rural transportation and telecommunications infrastructure. The design of public infrastructure policy is examined in the final section.

DEFINING INFRASTRUCTURE

Infrastructure is defined here as the services drawn from the set of public works that traditionally has been supported by the public sector, though in many cases the infrastructure services may be produced in the private sector. Water, sewerage, solid waste management, transportation, electricity, and telecommunications are examples. Firms' investments in their own productive capacity are not included as infrastructure in this paper. Similarly, human capital investment in workers is excluded.

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Infrastructure can be evaluated along two dimensions. First is in terms of the services drawn from the physical facilities and second is in terms of the physical facilities themselves. Infrastructure often is thought of in terms of the latter because of the close linkage that usually exists between the facilities and the services, such as exists with highway transportation. However, the primary interest of both consumers and businesses is services, not facilities, and a focus on services has advantages. For example, highlighting the services allows policymakers to think more creatively about what specific needs are being met and who the intended consumer is. Service orientation also allows more flexible planning for identifying the best technologies for meeting demands. Thus, unless otherwise noted, the term infrastructure is used here in reference to the services drawn from the facilities.

CONCEPTUAL RELATIONSHIP BETWEEN INFRASTRUCTURE AND ECONOMIC GROWTH

Infrastructure potentially can influence rural economic performance through three avenues: expanding the use of existing resources (labor, capital, etc.), attracting additional resources to rural places, and making rural economies more productive. First, existing resources will be used more intensively, both in the short and long term, when derived demand is increased in rural economies. Infrastructure construction, such as laying highways, building electric plants, and installing other capital facilities, offers the potential for short-term economic stimulus if rural firms and workers are hired during the construction process. These benefits can be particularly valuable if they are timed countercyclically, but regardless of when the construction occurs the benefits are temporary, lasting only as long as the construction. Longer term benefits for existing resources accrue to the extent that existing firms become more productive and hire additional workers as their capacity is expanded.

Second, infrastructure can have an effect by raising the productivity level of businesses operating in rural areas. Though it interacts with the other avenues, this is the primary economic benefit that is expected since existing resources will probably be used more intensively and new resources will be attracted by the potential for more productive business. Some examples can illustrate. Just-in-time techniques have allowed the textile industry to cut production and delivery time in half, from about six to three weeks (Apogee 1991). The textile industry also has been more efficient by linking its ordering, inventorying, and receiving processes directly with apparel manufacturers. The productivity benefits for the textile industry include faster operations and lower costs. Both of these benefits can be reaped only with a quality infrastructure. Just-in-time processes require an efficient transportation network, and electronic data transmission requires an effective telecommunications system.

Lack of appropriate infrastructure can lower productivity as well. It was reported that DuPont would like to ship certain hazardous materials in the western U.S. by rail instead of truck, but was unable to do so because the rail network was not sufficiently diverse. Time and resources would have been saved with rail transportation. Many small businesses in southern Italy are said to have failed because of poor north/south communications in Italy (Canullo 1992).

Third, infrastructure can attract other productive inputs to an area. Infrastructure can attract new or start-up firms and the expanded level of economic activity offers employment opportunities and increases regional product. Firms may come to an area because the infrastructure is very productive, is less expensive than that available in other places, is relatively unique in its availability (such as a more advanced telecommunications network than is available in other nearby locations), or is plentiful. Similarly, the improved quality of life associated with infrastructure services may attract or help retain workers who otherwise would leave rural areas.

Besides being a direct input into a firm's production process, infrastructure may provide an attractive environment in which households are willing to accept lower wages in order to locate; i.e., infrastructure may provide a *compensating differential*. Lower wages, arising because of a bundle of amenities offered within a community may improve attractiveness for business location.

EMPIRICAL EVIDENCE RELATING INFRASTRUCTURE AND ECONOMIC PERFORMANCE

A wide literature on the economic effects of infrastructure has developed during the past 15 years.[1] Researchers have used techniques that range from the very basic to the most sophisticated theoretical and econometric methodologies and have used different types of data in an effort to identify the relationship between output or productivity and the availability of infrastructure. Also, research has investigated the linkage between an available infrastructure and the migration and start-up of firms and the migration of workers.

The overall conclusion of the literature is that at the margin expanding infrastructure investments is likely to have a modest effect on rural economic performance. Even situations where large benefits from infrastructure investments have been reaped in the past do not necessarily provide evidence that future gains will result from similar expansions. The interstate highway system is a good example, where large benefits resulted from creating a network, but similar benefits would not arise from developing (or massively expanding) a new network. So, enhancing rural infrastructure generally should not be the primary focus of an economic development strategy, but infrastructure probably needs to be a component of well-structured programs.

Construction Impacts

The installation of physical infrastructure has the potential to generate employment as workers are used in the construction process. Jacoby (1994) observes that construction jobs are created rather rapidly following the brief contracting period that is necessary after a decision is made to invest in a project. The specific number of workers needed in the construction process varies considerably based on the size and type of project and the labor intensity of the facility being built. He also reviews some U.S. research on job creation in transportation construction. He finds an average of 10.4 jobs are created in rural areas for each $1.0 million (1984 dollars) spent. Only 9.6 jobs are generated for each $1.0 million in urban areas. He notes that job creation ranges from 7.4 jobs for every $1.0 million spent for resurfacing to 11.5 jobs per $1.0 million spent for major road widening.

Two major criticisms can be made of research such as that reviewed by Jacoby. First, there is an implicit presumption that resources devoted to construction of transportation facilities have no alternative use, so the job creation represents a net increase. However, the resources normally are obtained through taxes or user fees, and net job creation exists only to the extent that construction generates more jobs than private expenditure of the revenues. Of course, net job creation can occur in rural places (though not necessarily in the total economy), if revenues are collected in urban areas and spent in rural places. Second, construction related jobs last only as long as the construction process. Deno and Eberts (1989) found a significant increase in personal income when infrastructure (of all types) was constructed.[2] However, they concluded that most of the effect lasts less than one year. Thus, an appropriate strategy is to provide infrastructure because of the long-term expansion of service benefits and to view jobs and income generated during the construction phase as a peripheral benefit.

Does Infrastructure Increase Productivity?

Two types of research have been conducted on the direct productivity gains from infrastructure. One is benefit-cost analysis of economic rates of return from specific projects. The second is research focused on measuring econometric relationships between infrastructure, private capital, and labor and economic output. Gramlich (1994) reports that benefit-cost analysis in the 1980s found real rates of return were very high for highway maintenance (35 percent) and for new urban highway projects (15 percent). Rates of return were acceptable for upgrading road sections to minimum standards (5 percent). However, rates of return were generally found to be low for new rural road projects and negative for work performed on roads that were already at or above minimum standards. Gramlich questions the current value of such general studies because most of them were performed at a time when infrastructure investments were smaller, suggesting that returns could be much lower today. Further, he notes that such general conclusions may be of little value, since the real question is whether specific investments at specific locations would yield the desired returns. As he observes, some places have sufficient infrastructure and others do not, and the key issue is whether returns are acceptable at the specific locations.

Econometric work has been the focus of most recent research. (See Table 1 for a summary of research on economic growth and infrastructure.) Put together, the econometric research leads to the conclusion that infrastructure has an effect on output, but the measured effect differs widely, depending on the way in which the econometric model is specified, the data used, and the time period examined. The best econometric techniques would tend to suggest a smaller rather than larger contribution to production.

Aschauer's (1989) first study, using aggregate macroeconomic data, motivated the recent spate of research with his finding that infrastructure is extremely productive. Some of his research indicated that infrastructure is so productive that it can pay for itself in a single year, a seemingly unlikely result. His research also suggests that returns to transportation were much greater in the period up to the early 1970s than in subsequent years. These results can lead to the conclusion, for example, that investments in building the initial highway network were very large, but the returns to building another network (or significant expansions in the existing network) would be very small (Fernald 1999).

The findings of Aschauer and others, based on aggregated macroeconomic data, have been subjected to a number of technical criticisms, including the direction of causality, missing variables, simultaneity bias, and trending. Various authors have sought to correct the research to account for these problems, and in many cases found a smaller contribution from infrastructure. For example, the return to infrastructure is found to be much smaller when the data are corrected through first differencing (for example, Tatom 1991). The overall finding of the time series literature is that infrastructure is productive, but the strong impacts found in Aschauer's original work do not hold up to further scrutiny.

In a parallel set of literature, economists have used cross section or cross section-time series data for states, cities, and countries to examine the role of infrastructure in production.[5] This literature generally concludes that infrastructure contributes much less to aggregate output than was found in the time series literature. For example, in an analysis using state-level data Holtz-Eakin (1994) finds essentially no impact of infrastructure on productivity when proper econometric techniques are used.

Does Infrastructure Create Long-Term Jobs?

Job creation is a key goal for most economic development strategies. Whether rural employment rises

Table 1
RESEARCH ON INFRASTRUCTURE AND ECONOMIC GROWTH

Author	Focus/relevance	Key findings
Aschauer (1989)	Evaluates the effect of public investment on the growth of private inputs, and in turn, the effect of input growth on output growth. Author views public capital and private capital as substitutes in production.	Finds that an increase in public investment expenditure of $1 billion crowds out anywhere from $1 to $1.5 billion of private investment expenditure. Author interprets this to mean that firm managers appear to take directly into account the availability of public capital for use in private production.
Aschauer (1990)	Considers the relationship between aggregate productivity and stock and flow government-spending variables.	Finds that the nonmilitary public capital stock is more important in determining productivity than is either flow of nonmilitary or military spending.
Aschauer (1998)	Looks at the role of public infrastructure capital in economic growth of 46 developing countries. Develops and empirically implements a growth model.	In growth model, output depends on private capital, human capital, and public capital. Finds empirical support for the importance of infrastructure provided, an efficient financing system exists.
Cummings et al. (1986)	Use late 1970s panel data set of dollar value of investment in SMSAs to study the responsiveness of wages to municipal infrastructure.	Measure of responsiveness is -.035. Survey findings of this variable range from -.037 to -.04.
Deno (1988)	Considers effect of infrastructure on growth path of regional private manufacturing.	Finds water and sewers have the largest effect in expanding regions, while highways have the largest effect in declining regions.
Diamond (1990)	Uses "Denison growth accounting approach" to examine evidence on the contribution that public capital expenditure makes to the growth of developing countries.	Concludes that while current private capital expenditures for directly productive purposes exert a positive influence on economic growth, public capital expenditure appears to exert no influence.

Table 1 (continued)

RESEARCH ON INFRASTRUCTURE AND ECONOMIC GROWTH

Author	Focus/relevance	Key findings
Ethier (1982)	Discusses economies of scale in regional factors and their contribution to international trade.	Suggests exports may depend on regional efficiency.
Ford & Poret (1994)	Examine the relationship between infrastructure and economic development. Utilize data for 12 OECD countries.	The study finds weak support for Aschauer's hypothesis that boosting infrastructure investment promotes economic growth. In particular, the regression results are not sufficiently robust to provide much support for the policy of a sharp rise in infrastructure investment.
Fox & Murray (1990)	Focus on startup and relocation of business establishments within county areas of Tennessee in response to presence of infrastructure.	Long-run policy, as evidenced through providing infrastructure, is an important accommodating factor for economic activity. The rate of new-firm entry is higher where interstate highways are present, but the responses are small.
Garcia-Mila (1989)	Estimates real GNP components, including government purchases.	Concludes that state and local purchases have positive multiplier effect while military purchases do not.
Garcia-Mila, McGuire (1992)	Investigate the productive contribution of publicly provided goods and services, highways, and education in particular.	Find that with every dollar of education spending output increases by 16.5 cents. Output increases 4.5 cents for every dollar increase in highway spending.
Glomm & Ravikumar (1992)	Build a growth model with infrastructure as an external input into private production functions.	Show that public infrastructure negatively affects the cost function.
Harmatuck (1996)	Examines the influence of transportation infrastructure on economic development.	Finds the aggregate output response to net nonmilitary public investment is about .03.

Table 1 (continued)

RESEARCH ON INFRASTRUCTURE AND ECONOMIC GROWTH

Author	Focus/relevance	Key findings
Holtz-Eakin & Schwartz (1994)	Examines the role of infrastructure in a "structural model of economic growth".	Find little support for dramatic productivity boost from increased infrastructure outlays. In a statistical specification designed to provide an upper bound for the influence of infrastructure, the authors estimate that raising the rate of infrastructure investment would have had a negligible impact on annual productivity growth between 1971 and 1986.
Holtz-Eakin and Lovely (1996)	Study productivity and economies of scale of public infrastructure. Also consider returns to variety.	Find public capital elasticity of manufacturing output is .637. Public capital elasticity on nonmanufacturing output is .360. Find productivity effects only in manufacturing sector. In the non-manufacturing sector, infrastructure may increase the number of firms (variety) and, thus, output.
Hulten & Schwab (1991)	Consider the possibility of overinvestment in infrastructure.	Note that correlation between growth and public capital exists but suggest no causation.
Hulten & Schwab (1997)	Discuss the role of the bond market on financing infrastructure growth.	Conclude public investment reduces private costs.
Lynde & Richmond (1991)	Illustrate the cost reducing effect of public capital on the private sector.	Find that the marginal product of public capital is positive and that constant returns to scale is supported when public capital is included in the production function.
Martin & Rogers (1995)	Consider model with increasing returns to scale with various infrastructure types.	Find that regional policies affecting domestic firms leads to high growth, while policies subsidizing international firms cause domestic firms to exit the market.
Morrison & Schwartz (1992)	Examine the relationship between state infrastructure and productive performance.	Find that infrastructure investment does provide a significant direct benefit to manufacturing firms and thus augments productivity growth.

Table 1 (continued)

RESEARCH ON INFRASTRUCTURE AND ECONOMIC GROWTH

Author	Focus/relevance	Key findings
Munnell (1990)	Explores "significant contribution" of public capital investment on national output, productivity, growth, and international competitiveness at the state and regional level.	Concludes that those states that have invested in infrastructure tend to have greater output, more private investment, and more employment growth. Author's findings suggest that public investment comes before the pickup in economic activity and serves as a base.
Nadiri & Mamuneas (1991)	Consider the productivity of public capital and research and development using a production function with these inputs.	Find positive effect of infrastructure investment on growth, at the same time that infrastructure investment is declining.
Neill (1996)	Uses a growth model to study the responsiveness of output to growth.	Suggests that output's responsiveness to infrastructure should determine optimal infrastructure investment.
Nijkamp (1986)	Focuses on the role of infrastructure in a regional development strategy. Uses different statistical techniques and a so-called quasi-production function to show importance of infrastructure.	The extent to which infrastructure contributes to regional development varies over time and depends on the overall level of economic welfare. The statistical results demonstrate a high degree of correlation among successive infrastructure indicators. Also, the results demonstrate that densely populated industrialized areas tend to have higher network infrastructure endowment than peripheral, agricultural, and less densely populated areas.
Rubin (1990)	Reviews infrastructure/ productivity issues.	Finds a weak link between growth and infrastructure and recommends caution in developing public policy that "pumps" money into infrastructure.
Shah (1992)	Using data from Mexico to construct a production function that mirrors circumstances in developing countries with imperfect markets, credit rationing, and price controls, examines the effect of infrastructure on output.	Finds an infrastructure elasticity of output equal to .046.

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Table 1 (continued)

RESEARCH ON INFRASTRUCTURE AND ECONOMIC GROWTH

Author	Focus/relevance	Key findings
Stover (1987)	Discusses infrastructure's effect on the supply of housing using pooled data on 64 MSAs from 1973 to 1982. Also measures private costs of infrastructure.	Finds housing quality variables sensitive to a number of infrastructure variables.
Wylie (1996)	Studies aggregate growth attributable to infrastructure changes in Canada from 1946 to 1991; also considers marginal productivity of inputs.	Finds marginal product of labor is .54. Marginal product of capital is .213, and marginal product of infrastructure is .248. All are diminishing.

or falls with productivity enhancing infrastructure depends on whether infrastructure and labor are complements or substitutes in the production process. If businesses hire more workers as the infrastructure is improved, infrastructure and labor are complements, and if they hire fewer workers they are substitutes. Specifically, as infrastructure expands, they are complements if the demand for labor rises and they are substitutes if the demand for labor falls. An important factor in empirical analysis is whether the relationships are measured before or after producers are permitted to expand output in response to better infrastructure. Analytically, infrastructure may be measured as a substitute for labor if business production is held fixed, but a complementary relationship may be found as a more available infrastructure system allows firms to expand their efficient level of production and to hire more labor to achieve the expanded level of production.[4] For example, DuPont could reduce the labor involved in shipping hazardous waste from ten to two people if rail service were available in the western U.S. In this case, infrastructure and labor appear to be substitutes. But DuPont could raise the flow rate of production by 25 percent if rail transportation were available because less time would be necessary in the inspection and filling processes. Thus, total employment at the facility could rise even though shipping employment declines.

The literature has somewhat mixed results but generally points to a complementary relationship.[5] In studies based on U.S. data, Costa et al. (1987), Eberts (1987), Munnell (1990), and Deno (1988) conclude they are complements. Deno also examined effects in growing versus declining regions and found the greatest employment impacts of infrastructure investments are in declining regions. U.S. studies by Nadiri and Mamuneas (1991) and Lynde and Richmond (1992) are examples where labor and infrastructure are found as substitutes. Shah (1988) finds labor and infrastructure to be complements in his study of Mexico. In a study by Berndt and Hansson (1991) that relies on Swedish data, labor and infrastructure are determined to be complements during the beginning and end of their sample period and substitutes during the middle years (1970s and early 1980s). Eberts, Deno, and Nadiri and Mamuneas use data on the manufacturing industry and the other research has been based on broader measures of the economy.

In summary, a reasonable conclusion is that infrastructure and employment are complements, at least in part because improved infrastructure allows the combination of all firms to reach a higher optimal level of output.[6] The somewhat inconsistent findings in the research can be attributed to several factors. The aggregate nature of data used in the studies mixes industries where infrastructure is complementary with industries where infrastructure is substitutable with labor. Another is the studies use widely different methodologies and data bases. Also, researchers define substitutes and complements in different ways.

Attracting Factors of Production

Infrastructure can indirectly stimulate employment as it attracts entrepreneurs, a quality labor force, and investment capital into rural areas. Researchers have devoted considerable attention to analyzing the determinants of location for employment and businesses, though little of this literature has focused on the importance of infrastructure. The research generally provides evidence that better infrastructure can have a modest effect on where people and businesses locate.

Hulten and Schwab (1991) concluded that total factor productivity, not the migration of factors, was the major source of U.S. growth between 1951 and 1986. The design of Hulten and Schwab's study causes the effects of infrastructure to be included in total factor productivity, though they used regression analysis to examine the determinants of total factor productivity, and found that differences in infrastructure did not significantly affect total factor productivity. Nonetheless, they determined that input growth was the primary source of regional variation in growth rates, meaning effects of infrastructure on factor migration, to the extent they occur, have the potential to be an important source of growth in rural versus urban areas.

Infrastructure is found to have a positive effect on entrepreneurship and firm location decisions. Fox and Murray (1990) examine the start-up rate for businesses in county areas of Tennessee. They consider the effects on business start-ups of a number of public policy factors such as taxes, government spending, infrastructure, and education. They find limited evidence that infrastructure is a determinant of where start-ups occur. The presence of interstate highways is consistently related to the start rates of firms of essentially every size. Local rail service also affects the start-up of certain sized firms. Access to airports, broader measures of highway availability, and infrastructure prices did not have a consistent effect on start-up rates.

Eberts (1991) also studied the relationship between public policy variables and firm locations using data for 40 metropolitan areas in the U.S. He concludes that growth in the public capital stock has an effect on location of small firms, but not other sized firms. Holtz-Eakin and Lovely (1996) find that infrastructure has its effect on production by increasing the number of manufacturing firms, and therefore total manufacturing output, but does not increase output per firm.

The attractiveness of infrastructure for the workforce has received some attention. Cummings et al. (1986) summarize literature that uses either hedonic price estimation or contingent value methods to measure the substitution of wages for infrastructure in rural U.S. regions.[7] The authors estimate a hedonic price model using time series/cross section data for 26 rural towns and provide contingent value estimates based on surveys in three of the same 26 towns. They report an elasticity of about -0.04 using each approach, meaning that people will accept about a 0.4 percent reduction in wages for a 10 percent increase in infrastructure services. The willingness to accept lower wages in places with better

Table 2
DAILY VEHICLE MILES OF TRAVEL PER LANE-MILE

	1985	1987	1989	1991	1993	1995	Annual rate of change (percent)
Rural							
Interstate	3,200	3,530	3,880	4,120	4,310	4,640	3.8
Arterial	3,190	3,390	3,600	3,660	3,600	3,880	3.9
Urban							
Interstate	10,340	11,230	11,990	12,420	12,520	13,110	2.4
Arterial	7,850	8,230	8,660	8,740	9,030	9,210	3.6

Source: U.S. Department of Transportation Report to Congress, 1997.

infrastructure implies that workers are attracted to a region by available, quality infrastructure. Several other studies show that wages are in fact lower in areas that have a large bundle of amenities. Herzog and Schlottmann (1989) showed how various metropolitan area characteristics affect the location decisions of high-technology workers and therefore the location of high-technology industry.

Fox, Herzog, and Schlottmann (1989) do not directly investigate the effects of infrastructure but do determine that the public sector characteristics of an area, such as local public services and taxes, are important determinants of migration decisions. They separate migration decisions into the decision to move, the decision to move within the general area where one already lives, and the decision to enter a new area. They find that public variables are generally more important in pushing people from the area where they live than in attracting them to a new area. The greater information that people have about where they live versus where they might go is hypothesized as the reason. Thus, the lack of quality infrastructure in many rural areas will have its greatest effect through pushing existing residents out, to the extent these same effects hold for infrastructure.

Rietveld (1989) reviews research on the effects of transportation on the location of employment demand. However, the research often is based on reduced form structures, meaning employment demand and supply cannot be separated. He concludes that studies in the United Kingdom generally indicate transportation has had little effect, though U.S. studies tend to find a somewhat larger impact.

PRESENT INFRASTRUCTURE STATUS

Decisions to make infrastructure improvements are by their very nature place specific. Still, it is instructive to review the status of infrastructure conditions in the U.S. This section reviews two infrastructure types, transportation and telecommunications, and Internet connectivity.

Rural Transportation System

The agricultural and manufacturing sectors depend heavily on transportation, particularly on roads. However, much of the rural transportation system was begun during the 1930s, and was designed to support the slower and lighter traffic of the time. According to the U.S. Department of

Table 3

INTERSTATE BRIDGE DEFICIENCIES, 1990-96

	1990		1992		1994		1996	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Rural bridges	29,171		29,148		28,865		28,638	
Deficient bridges	6,811	23.4	5,659	19.4	5,342	18.5	5,479	19.1
Urban bridges	24,012		25,013		25,861		26,596	
Deficient bridges	8,397	35.0	8,066	32.3	7,920	30.6	8,181	30.8
Total bridges	53,183		54,161		54,726		55,234	
Deficient bridges	15,208	28.6	13,725	25.3	13,262	24.2	13,660	24.7

Source: National Bridge Inventory, U.S. Department of Transportation Report to Congress, 1997.

Transportation (DOT), total national public road and street center-line milage in 1995 reached 3.91 million miles, of which 79 percent is located in rural areas. Today, increased demand for rural roads puts greater pressure on each dimension of the rural transportation network. Between 1985 and 1995, daily vehicle miles of rural interstate travel increased by 45.0 percent (Table 2) while urban increased only 26.8 percent. The relative increase in rural interstate travel is even higher given that the definition of urban areas was expanded to include additional space between 1985 and 1995. Demand for arterial roads also has grown more rapidly in rural than urban areas. The U.S. Department of Agriculture (USDA) estimated that in 1993 the U.S. transportation system carried 769 billion ton-miles of agricultural commodities, which is 31 percent of the U.S. total ton-miles.

Quality of road transportation is also a key issue. DOT estimates that 28 percent of the nation's highway system is currently in less than fair condition. In 1994, USDA conducted a survey on the condition of country roads and rated 50 percent of the country road mileage as less than adequate, or worse. Increased use of semitrailers and other similar traffic accelerates the rate of deterioration of many local and collector roads, resulting in greater damage to the rural transportation network and increasing the cost of road maintenance for state and local governments. Today, more than 80 percent of transport-related expenditures are for maintenance of aging and deteriorating infrastructure. It has been estimated that each ton-mile of truck traffic on country roads increases road maintenance costs an average of $0.75. Nonetheless, as previously noted, the low usage of such roads can often lead to a low benefit-cost ratio for improvement.

Rural interstate bridges accounted for 51.9 percent of the total number of 55,234 interstate bridges in 1996 (DOT 1997). The condition of bridges has improved, but almost one-fifth of rural interstate bridges are still classified as deficient, meaning they cannot carry expected loads or lack adequate clearances and require significant maintenance, rehabilitation, or replacement (Table 3).

Growing demand for highways appears to be motivated in part by a shift away from deteriorating rail service. There has been noticeable abandonment of rail lines in many rural areas because of poor maintenance yards and insufficient demand. The American Public Transit Association (APTA) has rated 30 percent of rail lines as poor.

Estimates of "needs" for highway expenditures have been prepared by several organizations. For example, the Federal Highway Administration (FHWA) estimates $220 billion would be needed to eliminate the nation's highway and bridge deficiencies. The needs in rural roadways and bridges alone would be over $167 billion, representing more than two years of all government highway spending ($92.5 billion in 1995). However, needs estimates must always be viewed with skepticism because the estimates are based on the cost of meeting certain standards without careful evaluation of whether the return to the investments is acceptable.

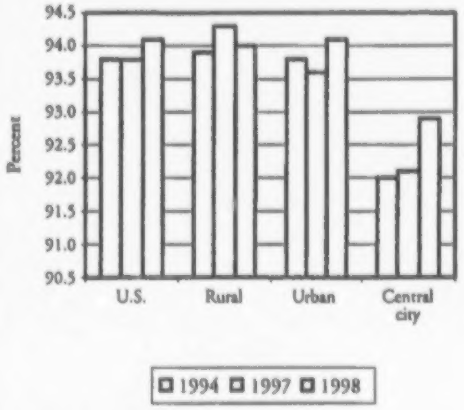
Telecommunications Infrastructure and Internet Connectivity

Telecommunications infrastructure and services are provided in rural areas by both rural-based and non-rural-based telecommunications firms. Rural telephone companies serve 12.4 million rural residents, accounting for 5.1 percent of the U.S. population. Non-rural telephone companies serve the remaining rural population of 49.3 million rural people, or 19.9 percent of the total population.

Access to telephone service, though not universal, is very broad across the U.S. and is about the same (Chart 1) in rural and urban areas. On a specific household basis, the likelihood of owning a telephone depends on factors such as income, education, and age. The early days' telecommunications gap between rural and urban areas was reduced by states' emphasis on universal provision of telephone services and on equitable costs of basic telephone services. In addition, telephone companies serving rural areas were exempted from certain regulatory obligations in many states.

Chart 1

PERCENT OF U.S. HOUSEHOLDS WITH A TELEPHONE
(by rural, urban, and
central city areas)

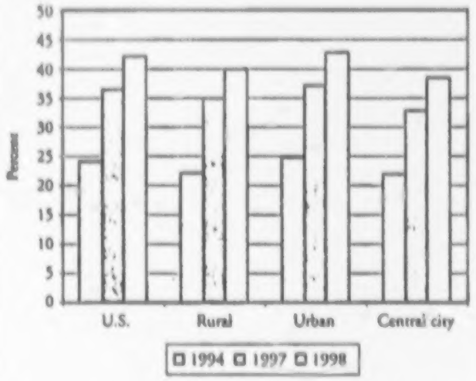


Source: National Telecommunications and Information Administration (NTIA) and U.S. Census Bureau, U.S. Department of Commerce, using current population surveys.

Today, the focus on access has shifted to personal computer ownership and accessability to the Internet. The Internet can reduce barriers resulting from big distances and can enhance economic vitality of the region. As a result, information infrastructure is becoming one of the factor endowments that determine competitive advantage of rural areas. In the last few years, Americans' ownership of computers has experienced a significant increase (Chart 2), as more households and businesses across both rural and urban areas own computers. The cost of Internet provision highly depends on population density and an area's land configuration. Despite these factors, rural areas lag slightly behind urban areas in

Chart 2

PERCENT OF U.S. HOUSEHOLDS WITH A COMPUTER
(by U.S., rural, urban, and central city areas)



Source: National Telecommunications and Information Administration (NTIA) and U.S. Census Bureau, U.S. Department of Commerce, using current population surveys.

computer ownership, but have remained relatively close as overall ownership has grown.

Internet connectivity depends on gaining access through an Internet Service Provider (ISPs) and on the availability of telecommunications backbone networks and broadband technologies. There are different types of ISPs—national service providers (serve 69 percent of U.S. households), local phone companies (14 percent), long-distance companies (4 percent), cable TV (2 percent), wireless firms (1 percent), and other ISPs (10 percent). Internet access in rural areas lags behind that in urban areas at all income levels (Table 4). Little of the difference can be explained by differential ownership of computers, so other factors such as income and quality of telecommunications infrastructure are more likely to explain the differences. According to the DOC and U.S. Agriculture Department (2000) report,[8] most of the broadband services in the U.S. are provided over cable modems (1.5 million subscribers) and over Digital Subscriber Line (DSL) (504,000 subscribers). Deployment of cable modems and DSL technologies depends heavily on population density and therefore these technologies are primarily deployed in urban areas. DOC and USDA report that more than 65 percent of cities with populations over 250,000 but less than 5 percent of towns with populations of less than 10,000 have cable modem service. Similarly, more than 56 percent of cities with populations over 100,000 and less than 5 percent of towns with populations less than 10,000 have DSL technology available. According to the DOC and USDA report, the customer start-up cost for cable modem and DSL is almost the same, typically $200 to $300.

There are other ways to connect homes and businesses and to provide broadband service to rural areas, including fiber optic cable, different kinds of wireless systems, and satellite systems. A common characteristic of these options is their high cost of deployment. It is expected that increasing the competition among broadband service providers will reduce the price of service and will accelerate deployment of broadband technology. Therefore, the DOC and USDA report recommends that policymakers promote the universal service and deployment of advanced telecommunications services to all Americans.

DESIGNING AN INFRASTRUCTURE BASED ECONOMIC DEVELOPMENT STRATEGY

Public Commitment to Rural Employment Generation

A public policy to create jobs or expand output in rural areas can be structured at several levels. One option is to allow rural areas to provide and finance

Table 4

PERCENT OF U.S. HOUSEHOLDS WITH ONLINE SERVICE
(by income by U.S., rural, urban, and central city areas)

	U.S.	Rural	Urban	Central city
Under $5,000	7.2	5.6	7.7	6.6
5,000-9,999	3.9	2.3	4.4	4.6
10,000-14,999	4.9	2.8	5.6	5.7
15,000-19,999	7.0	4.5	7.8	9.6
20,000-24,999	9.0	6.5	9.9	10.0
25,000-34,999	13.9	11.6	14.7	13.3
35,000-49,999	20.8	16.0	22.6	23.0
50,000-74,999	32.4	27.6	33.9	35.1
75,000+	49.2	44.4	50.3	49.4

Source: U.S. Department of Commerce, National Telecommunications and Information Administration, A Report on the Telecommunications and Information Technology Gap in America, July 1999.

their own infrastructure needs. A minimal but broader strategy would be to use enhanced rural infrastructure (as part of a broader strategy) to forestall a shift in employment from rural to urban areas that otherwise might occur. The presumption of such a strategy is that infrastructure is important to production or quality of life, and its lack will lead some rural firms, entrepreneurs, and workers to move to urban areas where they believe infrastructure and other components of production are more readily available. A higher level of public commitment is for rural infrastructure (at least conceptually) to be upgraded to the point that rural sites are preferred to urban locations, eliciting a shift of jobs to rural places. In this case rural jobs come at the expense of urban jobs. A completely different public commitment is to enhance infrastructure with the goal of making rural places more productive and allowing a general increase in the country's ability to produce (or decrease in the cost of production). This allows rural output to rise with no offsetting loss in urban areas. Of course, this option is only viable to the extent that the returns to rural infrastructure investment allow for productivity gains at the margin, and the research review given above raises serious questions about the potential for this option. The level of public resources that should be invested in rural infrastructure depends on which goal(s) is selected. Obviously, the latter is the easiest political choice because all areas can be better off, and because it is not inconsistent with either of the first two goals, but it could be very expensive to achieve.

The research review provided above indicates that the expected returns from infrastructure can often be small, so a public policy of improving rural economies that relies heavily on infrastructure development is unlikely to be productive. Four cases arise where infrastructure investments would be particularly appropriate, and the discussion below is intended to articulate the types of communities where these might best fit. The first two are very place-specific individual projects, and in both cases the investments should be made because demand exists, and not because of economic growth expectations. First, investments are effective whenever the properly priced infrastructure would be self-financing. Thus, the revealed behavior of users indicates that the benefits of the infrastructure exceed the costs of service delivery. Second, investments should be made in any other situation where the benefits exceed cost, even though a standard pricing policy may fail to allow the project to be self financing. Such a case is discussed in the financing section below. Great care must be taken in defending this explanation, because people are prone to argue that there are sufficient benefits to provide a project that cannot be self financing, in hopes of receiving a subsidy from outside.

Third, investments can be appropriate as one component of a broader economic development strategy, where the emphasis is normally on another aspect of the local environment that is inhibiting growth, such as an improved labor force or better regulatory policy. Finally, enhanced infrastructure is appropriate when a merit good or positive externality exists. Improvements in Internet access to offer better education and health services in rural places can be an example. Again, care must be used here, because this offers an opportunity for subsidies where none is warranted.

General Policy Prescriptions

Specific recommendations on the appropriate type of infrastructure development are difficult to make because infrastructure needs vary widely across firms and areas. Several general guidelines are outlined in this section. Ultimately, benefit-cost analysis of specific infrastructure investments in specific places is necessary to make appropriate judgments. The next section offers guidance that is individualized for different rural regions. First, a basic minimum complement of infrastructure services is necessary to support economic activity and employment. Without this minimum set of services, rural areas will be unable to grow and continue creating employment. The minimum should be in place to allow rural communities the opportunity to be economically viable. An equity-based argument that these services are essential to a minimum quality of life also can be made.

The necessary set of services includes water, telecommunications, electricity, transportation, sewerage, and solid waste disposal. Transportation and telecommunications are necessary to connect rural areas with the world economy. Water and electricity are inputs in production. Solid waste disposal and sewerage are essential to maintain environmental standards. Each of these services can be delivered in different degrees and the difficult task is determining the specific service characteristics that comprise the minimum complement. This difficulty is exacerbated because the specific service characteristics in the minimum complement may change over time. Thus, consistent attention must be paid to defining the essential set of services. We can be certain that the minimum set does not include the entire range of service diversity and quality, so a goal of ubiquitous infrastructure is misplaced and represents a misallocation of resources.

In the absence of certain infrastructure, rural areas may be unable to compete for some jobs, but this is not the criterion that should be used in deciding whether to invest in new services. This decision must be made by comparing the expected total benefits and total costs of infrastructure.

It is essential that infrastructure policy be designed to allow for differential infrastructure beyond the minimum. Mandates requiring a specific service delivery technology or a particular service level often are responsible for substantially raising minimum service levels and can result in excessive infrastructure. Mandates must be carefully evaluated and limited to those that are absolutely essential.

Second, a major conclusion arising from the synthesis of research on the importance of infrastructure to economic growth is that infrastructure is essential to accommodating growth, but is unlikely to stimulate self-sustaining growth that would not otherwise occur. In other words, infrastructure is a necessary but not sufficient condition for growth. An inadequate infrastructure can inhibit growth but its availability does not overcome other limitations that may exist in rural communities. This guideline implies that infrastructure service levels should be set to accommodate user demands, and investments should not be made prospectively, in hopes that economic activity will be "caused" by infrastructure investments. However, in selected cases, it may be appropriate to diffuse technologies to rural places when policy makers are certain that demand will develop even though users are not fully informed about the specific applications, and therefore currently exhibit low demand.

However, the tendency is to overexpand not underinvest in infrastructure. Rural politicians may seek to do so because federal or state grants and subsidies are available. Also, competition for economic development can lead to overbuilding, just as it encourages lower taxes. The argument may be made that every type of infrastructure is necessary to compete, even when it is not the best use of resources. For example, ISDN capabilities were made available in every part of Tennessee, even though most rural places had no use of the technology, and now newer and better technologies are more appropriate. Eberts has argued that infrastructure should be installed as an economic development incentive only if the benefits from service delivery exceed the costs and if the infrastructure clearly increases business productivity.

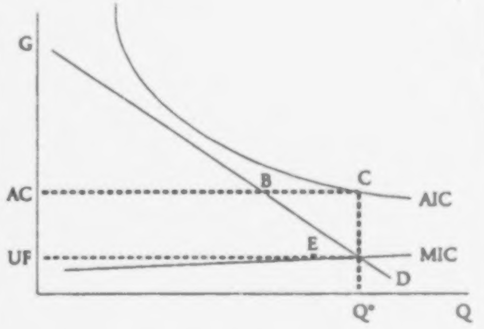
In some cases, politicians may underinvest because they take a short-term view of the benefits. Of course, the incentive to take a narrow view of benefits only arises when the services are locally financed. Politicians may also fail to choose the most efficient means to deliver services. For example, selecting capital-intensive technologies that increase the earnings of campaign contributors rather than alternative means to meet service demands.

Third, local, market-based approaches offer the greatest potential for solving infrastructure problems and shortfalls. The differing service needs of individual rural areas arise because of varying industrial structures, tastes, and demands. Local decision making bodies are best able to incorporate local information into planning service delivery. National or regional decisions frequently lead to wasted resources with all areas being provided similar services. In some cases too much infrastructure will be made available and in others too little. Further, as a general rule, market-based decisions, financed with user fees, lead users to clearly evidence demands for services and result in efficient service levels. National and regional subsidization only should be used to meet equity objectives or, in limited cases, to ensure appropriate service delivery in cases of market failure. National and regional decision making also can be appropriate for major projects such as national highways, the Eurotunnel, and other services where many regions or countries are affected.

Policy on Financing Infrastructure

An infrastructure expansion normally requires a one-time financial source for the initial capital investment and an ongoing source to fund the life-cycle costs for operation and maintenance. Identification of how these requirements will be funded is a key aspect of infrastructure policy. Options include national and local tax revenues, borrowed funds, and user fees.[9] User fees should be the primary revenue source in rural areas to the maximum extent possible. The research review provided above suggests that infrastructure should generally be self financing regardless of whether services are delivered by the public or the private sector (Gramlich 1994). User fees provide a revenue source, ration

Figure 1
NON-SELF-FINANCING INFRASTRUCTURE INVESTMENT



Source: Author

receipt of services to those users who place the greatest value on them, provide a market test for determining the level of infrastructure to deliver, and achieve equity in the sense that those who receive services pay for them (both within and across states).

Nonetheless, there are cases where incremental infrastructure investments could be welfare-enhancing and yet fail to be self financing with user fees. Figure 1 illustrates such an example. Suppose a decision is being made on whether to incrementally improve the telecommunications system through installation of DS3 lines or ADSL (asymmetrical digital subscriber lines). The graph is drawn assuming there is a large fixed cost of installation and a low marginal usage cost. Economically efficient usage is at Q^*, where marginal incremental cost equals demand. The efficient user fee is given by UF, the price purchasers will pay for Q^*. Total revenue from pricing the service, $Q^* * UF$, is less than the total incremental cost, $AC * Q^*$, so the system is not self-financing. However, service benefits are the entire area under the demand curve to Q^*, and this exceeds total incremental cost as long as the area of GBAC is greater than the area of BCE.[10] The service should be provided, but means must be found to subsidize delivery. Cases where service delivery conditions are comparable to the graph are more likely to arise in rural than in urban areas because dispersed populations lead to low demand.

A common suggestion is to finance services characterized by the graph using a two-part pricing structure. One part is a fixed charge (a charge to consume the service that is independent of usage) imposed to cover the loss and the second part is the user fee (set according to usage) that is set at the level illustrated as UF in the graph. The two-part pricing scheme is an appropriate solution if we know the fixed charge will not discourage consumers from joining the system. For example, two-part pricing structures have commonly been used for local telephone services and the fixed charge discourages few people from selecting phone service.

However, the fixed charge may discourage users from participating in some infrastructure systems, particularly those that employ new, emerging, and less understood technologies. A two-part scheme may work poorly for developing ADSL's in rural areas because applications of the technology may not be widely understood and a large fixed fee could discourage subscribership. As a result, a case can be made that a broader fixed fee paid by all telephone users, or a more explicit tax should be imposed to finance rural access to certain new and emerging technologies. In summary, a decision to deliver infrastructure based solely on a market test of whether it will be self financing may be less applicable for new and emerging technologies than for existing, well-known services. Again, great caution must be exercised in justifying expenditures to develop such technologies. The costs must be sufficiently low, and the demand (or potential demand) sufficiently large that a very strong case can be made to support subsidized service delivery.

An argument for national or regional finance of some local service delivery can be made in three circumstances. As noted in previous paragraphs, national or regional governments may have a limited role in subsidizing infrastructure finance to encourage diffusion of new technology. The Scottish Highlands and Islands determined that rural businesses would be unable to compete in industries involving data transmission unless they have access to digital systems (Scottish Highlands and Islands Development Board 1992). A determination was made that the initiatives would not occur if market forces drive the decision (Scottish Highlands and Islands Development Board 1992). Government support was obtained and projects were developed to provide ISDN, a managed host computer system, and a data access network. Second, national or regional finance can be used if a decision is made on equity grounds to redistribute to rural areas. Outright grants can be used if the intent is to provide a significant redistribution to rural places and loans can be used if a lesser redistribution is intended. Third, the market will fail to provide services efficiently whenever there are significant service spillovers, such as with sewerage systems, or external economies. Some subsidy or corrective action is needed. However, Gramlich observes that about 70 percent of the benefits from infrastructure projects are in-state and federal grants often cover 80 percent of the cost, so federal grants often have the effect of encouraging overinvestment in infrastructure. Further, federal grants are normally given for infrastructure construction but the higher return is to maintenance.

INFORMATION INFRASTRUCTURE

The importance of rural telecommunications infrastructure (which is one of the bases for rural information infrastructure) has been studied by a number of researchers (Cronin et al. 1993, and Rowley and Porterfield 1993) and the results suggest that telecommunications infrastructure in order for rural areas to stay on a level playing field with urban areas. However, the role to telecommunications is best thought of in the broader context of information infrastructure.

The Internet and related technologies are revolutionizing the way people live, communicate, access information, work, create employment, and obtain services such as education and medical services. Information infrastructure can allow certain footloose service firms, such as telemarketing, back-office finance, and travel offices, to operate more effectively in rural areas. High-quality educational services potentially can be offered over the Internet and can be very important because of the limited human capital that is present in many rural areas. The relative lack of this technology in rural areas, particularly in economically integrated and intermediate areas, could widen the gap between urban and rural areas. Therefore, rural areas must take an active economic role to ensure access and connectivity.

The agenda adopted by U.S. Department of Commerce (DOC) to develop a national information infrastructure illustrates its significance. The DOC's goal is to develop and expand current information infrastructure in order to provide information to all Americans, when and where it is needed, at an affordable price. Information infrastructure consists of a number of different, independent elements of communications technology. DOC defines information infrastructure to include physical facilities used to transmit, store, process and display voice, data, and images. It includes a wide range of equipment such as computers, cameras, scanners, keyboards, telephones, fax machines, switches, compact disks, video and audio tape, cable, wire, satellites, networks, optical fiber transmission lines, microwave nets, televisions, monitors, printers, and much more.[11] Today's information infrastructure integrates and interconnects physical components of different technologies and industries in a way no other type of infrastructure does. It reaches across the separate areas of broadcasting, communications, and computing.

Much of information infrastructure lies outside the definition of public infrastructure used here, and includes some of the private capital of businesses and individuals. Indeed, it is difficult with the DOC definition to identify information infrastructure, at least in part because it would appear that there is no definitive set of elements since they are continuously evolving with new advances in communications technology. Narrower definitions have been developed. For instance, the Organization for Economic Cooperation and Development (OECD) defines information infrastructure to include *hardware* (PCs, routers, services, etc.), *network service providers, software*, and *enabling services*, essentially those parts necessary to support electronic commerce. According to OECD's study, hardware expenditures are the biggest part of this market, ranging from $10 billion to $30 billion, followed by software which ranged from $300 million to $900 million in 1996.[12] Of course, the specific expenditure needs are changing rapidly with the technologies.

Information infrastructure and the digital economy are transforming strategies and processes of doing business by reducing transaction and communication costs. Also, by evoking improvements in production quality and by raising customers' expectations, information infrastructure forces competitiveness and challenges rural areas. Access to information infrastructure is often person or business specific, though the ability to use certain technologies is dependent on improved telecommunications infrastructure such as ADSL lines. Unfortunately, rural America may be slower at adopting the new technologies given the needs for investment in both physical and human capital. Some of the services, such as two-way voices, already exist in rural America. However, services such as voice and video conferencing, audio and video programming, computer networking, interactive video, etc., may not be as available in some places. These services can be provided through rural schools and community centers but ultimately the benefits depend on their access and adoption in all types of businesses and uses.

Expanded telecommunications and Internet access are not an unmitigated blessing since their access can work both ways. Improved infrastructure can open the opportunity for urban service producers (such as lawyers and accountants) to sell services in rural places, just as the opportunity arises for rural producers to sell to urban areas. A disadvantage for rural places is that agglomeration effects appear to remain important in the delivery of producer services. Rural areas are less likely to have the synergy that is available in many urban areas. Thus, many believe the effect of telecommunications is to concentrate rather than disperse economic activity. One reason is branch offices can be eliminated and services delivered from a smaller number of networked computer systems (Hummelbrunner 1992). The net effect of additional telecommunications and Internet access may be less, rather than more service production in rural places, though there is little empirical data to support the contention. Even so, rural jobs cannot be protected by keeping these services out.

Also, rural economies are more likely to be characterized by production than by management or service jobs. Goods production can be advantaged by improved telecommunications and Internet access, as a result of efficiencies in such areas as ordering inputs, customer order processing, and customer billing. Still, produced goods remain very dependent on physical transportation, and the disadvantage of transporting across distances will not be offset by telecommunications.

Publicly financed investments or subsidies for information infrastructure are not as a general rule appropriate. Information infrastructure is generally provided in the private sector and is most efficiently financed with user fees. However, government intervention may be necessary to diffuse telecommunications and information technologies into rural areas, as illustrated in Figure 1. Also, a subsidy can be justified in limited circumstances where a future demand for the services can be clearly identified. But government decisions on which infrastructures to build or to subsidize are likely to be poor and any investments could be quickly outdated, so they should be tightly confined. The subsidy can be provided through a local or a national source, though Rowley and Porterfield (1993) argue for a strong local role in telecommunications development and financing.

There are some positive steps that can be taken. It is important for regulatory policies to be structured so that they are conducive to broad expansion of technology into rural places, or at least to not disadvantage rural places. Also, modern technologies should be put in places, such as schools and municipal centers, for the demonstration effect and to support education, health care, and other services.

Placing telecommunications technologies in rural places does not mean the ability to employ the technologies exists. Considerable effort may be necessary in many locations to develop applications of the technologies and to demonstrate their value to users. The Scandinavian telecottage system is one means of disseminating the ability to use emerging technologies. The telecottages are set up in central municipal buildings with the responsibility of teaching courses and offering counsel to local businesses. Telecottages initially receive support from a number of sources including the national government but ultimately are expected to be self-supporting. Rowley and Porterfield recommend establishing pilot communities that use a methodology similar to telecottages so that rural users can be familiarized with telecommunications and Internet services. The EC's STAR Programme (Special Telecommunications Actions for Regions) is focused on identifying and promoting an upgrade of the diversity and quality of services so that entrepreneurs and businesses can compete with producers in urban areas.

POLICIES FOR ECONOMICALLY INTEGRATED, INTERMEDIATE, AND REMOTE AREAS

This section identifies the efficacy of using infrastructure to stimulate growth in different types of rural regions. Policies are provided separately for economically integrated, intermediate, and remote rural areas. However, the policies are not appropriate for every area that fits these categorizations since there may be wide differences within these types of rural places.

Economically integrated and intermediate areas generally are more likely to reap economic gains from improved infrastructure. An important reason is that infrastructure can help create external economies in these regions. On the other hand, infrastructure is needed simply to overcome external diseconomies in many remote areas and to improve quality of life. An exception is that infrastructure enhancements may be very important to employment in remote areas with substantial tourism potential.

Economically Integrated Areas

Economically integrated regions have close linkages with urban areas and the broader world economy. Many years ago Niles Hansen (1965) observed that physical infrastructure is most likely to enhance the productivity of regions that have many of the factors necessary for growth, but have an insufficient infrastructure. Economically integrated areas are most likely to fit this criterion. In general these areas already have many attributes of a basic infrastructure, such as electricity, water, sewerage, solid waste collection and disposal, and transportation, in place, but the infrastructure may still be inadequate.

An infrastructure system has five attributes: accessibility, capacity, quality, diversity, and condition. Historically, the focus has tended to be on accessibility and capacity. The goal has been to ensure universal access to limited service levels. The focus in the future is shifting to an emphasis on other infrastructure characteristics, specifically quality, diversity, and condition. Data transmission requires consistent electric flows and good switching equipment in the telecommunications system. Just-in-time systems rely on high-quality communications and transportation networks. Competing in the delivery of financial services or telemarketing may require more sophisticated communications infrastructure, such as ADSL. Even production that appears less sophisticated can benefit from infrastructure that is of high quality and in good condition. For example, Coca-Cola drivers can operate more productively in the U.S. if they can deliver with two trailers hooked together (Apogee 1991). Both handling costs and mileage can be much lower. Two trailers can be hooked together only in areas with higher quality highways, meaning two trailers cannot be used in all areas. Roads also must be in good operating condition so rural workers have access to jobs in both rural and urban areas. Thus, the key strategy in economically integrated areas must be to upgrade the diversity, quality, and condition of services, where appropriate, so that entrepreneurs and businesses can compete with producers in urban areas and so workers can commute to the best jobs. Resources are inadequate for providing high-quality services for every infrastructure type, so precise decisions must be made about which enhancements are most important and where they are most important.

Intermediate Areas

Intermediate areas, like economically integrated places, likely have many of the essential characteristics for growth, such as an available labor force, in place. Often these areas have a shortcoming(s) that hinders growth. For example, the infrastructure may be inadequate or distance to market may be too great. In some of these cases, an appropriately enhanced infrastructure may be an effective strategy, but the role for infrastructure must be judged very carefully on a case-by-case basis, and any required infrastructure expansions normally financed locally.

Remote Regions

The major infrastructure policy in remote areas should be to provide services to meet the known demands of users, particularly with the goal of enhancing quality of life. In one sense, the relative isolation of remote areas means they have the most to gain from infrastructure services, such as telecommunications and Internet access. However, on net remote regions appear to have the least to gain from infrastructure investments that are focused on creating jobs, in part because service delivery costs can be very high as a result of the small and dispersed populations. Remote areas are less likely to have other factors in place to support strong growth. For example, the labor force often is very dispersed and lacking in necessary skills. Focusing resources on upgrading the education and skill levels of local labor forces would appear to offer much greater return than investment in new infrastructure. Further, distance and difficulty in moving goods to market normally are significant problems that can be only partially mitigated with a good transportation and telecommunications infrastructure.

Businesses in remote areas can benefit, in certain cases, from cost savings associated with closing down parts of the infrastructure. For example, rail spurs and some bridges may be closed with little consumption loss and considerable savings in operating costs. However, taking part of an infrastructure network out of service often can significantly inhibit operations of the remainder. The best solution is to avoid overbuilding the network in the first place.

The ongoing costs of operations, maintenance, and debt service can create major problems in remote locations if infrastructure is improved in hopes of reaping economic gain, even when some of the construction cost is grant financed. Unless the economy grows, the operations and maintenance costs can place a large burden on local areas as they seek to sustain an infrastructure system that is larger than what is necessary. Costs for existing business can be increased because higher service delivery expenses must be paid by current users. Further, in many cases remote areas already have excess capacity for at least certain types of infrastructure. Adding capacity in these instances is particularly unlikely to provide any stimulus to the local economy.

The problems created by excessive infrastructure are exacerbated when the initial capital investments are borrowed because the debt must be serviced, meaning future generations are burdened (in addition to ongoing operations and maintenance costs). A related problem is that the debt service capacity of rural areas can be absorbed when unnecessary infrastructure is installed, and the overhang can prevent communities from borrowing to undertake subsequent projects of greater importance.

Much has been written about the undermaintenance of infrastructure that occurs in many places and is most likely in remote areas. Undermaintenance creates two important problems. First, undermaintained infrastructure is more expensive both for the service provider and the user. The life-cycle costs of operating undermaintained roads are much higher compared with those where proper maintenance is provided. Users bear much higher vehicle operating costs because of heavy wear and tear on vehicles. Second, poor maintenance reduces the usable capacity of infrastructure. Reducing water leakage, electricity losses, and so forth expand infrastructure with no additional investment. Israel (1992) concluded that better maintenance is the least-cost means for expanding infrastructure capacity in developing country cities. Thus, the appropriate policy is better maintenance of roads, electricity, telecommunications, and other services as the most effective way to improve infrastructure quality, expand capacity, and lower costs. Facilities can be provided at lower life-cycle costs and with lesser investments, and users can access services at lower costs.

Transportation is probably the most important infrastructure type for remote areas since they have a significant need for access to broader markets. Of course, transportation can smooth the access to markets, but it cannot totally offset disadvantages of long distances. National and regional governments are the important players in connecting rural areas to markets since most of the transportation network lies outside the community. Transportation within remote areas also is very important to economic vitality. One reason is good intraregional transportation can allow widely dispersed workers to live on the farm and travel to work or travel long distances to employment. Still, better transportation is unlikely to dramatically improve remote economies, so investments in transportation facilities must be geared to demand.

Some advanced telecommunications can be advantageous to remote areas, though not necessarily for use directly by business. The major applications are likely to be for delivering higher quality education and health services. Better education, training, and health services can help upgrade the human resource capacity which is often the greatest problem in remote areas. However, care must be exercised in selecting an appropriate telecommunications technology that is not excessively costly, since a broad range of telecommunications services is not always essential.

ENDNOTES

[1] The literature has been surveyed in several places. For example, see Gramlich (1994).

[2] They found that per capita personal income rises 0.37 percent for every 10 percent increase in public outlays for infrastructure.

[3] Examples include Hulten and Schwab (1997) and Holtz-Eakin (1994).

[4] Literature on the relationship between inputs in production often has been couched in terms of how changes in relative factor prices affect relative factor usage. A more appropriate definition is for substitutes and complements to be described in terms of how the level of infrastructure affects prices of other inputs. An example of the contrast can be seen in Eberts (1987), who in an earlier draft of the paper found infrastructure and labor to be substitutes, using the former definition. However, in a later version he found the second definition to be more suitable and concluded they are complements.

[5] The results overstate the complementary nature of infrastructure to the extent that infrastructure attracts other inputs, since most studies fail to separate the attraction effects of infrastructure on labor, entrepreneurs, and private capital from the technical effects in production. A general equilibrium regional model (as employed by Holtz-Eakin and Lovely 1996) is necessary to separately identify these effects. On the other hand, the results understate the complementary relationship unless the effects are measured after output and all other inputs are allowed to adjust to the new optimal level.

[6] Holtz-Eakin and Lovely (1996) find that a company's market power is an important determinant of whether infrastructure investments expand output.

[7] Cummings et al. are seeking to determine whether the methodologies yield the same conclusions. They find there is no statistical difference between the two methodologies.

[8] "Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans," National Telecommunications and Information Administration (DOC) and Rural Utilities Service (USDA), April 2000.

[9] Borrowing frequently is used to finance the initial investment in capital facilities. However, borrowing only changes the timing of when another revenue source must be used to finance the facility.

[10] The analysis relies on an income-compensated demand curve.

[11] Adopted from The National Information Infrastructure: Agenda for Action, U.S. Department of Commerce, Information Infrastructure Task Force.

[12] *Communications Outlook 1997*, OECD.

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Investing in Rural Infrastructure: Discussion

Moderator: Larry Meeker

Mr. Meeker: We have time for a couple of questions. We'll have time later on for questions to the general group.

R. J. Baker, *Director of a community-level Economic Development Group:* If we don't overbuild capacity somewhat, how are we going to have the capacity to bring in additional industry, or expand even what we have?

Mr. Fox: Your point is well taken. If you have looked at my notes, you would have seen that point, but thank you very much for making it. Obviously, you don't build infrastructure just for today's demand, and thank you for being sure that I emphasized that clearly. You do need to build it with the expectation for appropriate growth in the economy, so I certainly agree with that, and I apologize for not making that point explicit.

So, what I'm arguing about is building for known demand, including reasonable expectations of growth. The same thing in terms of information infrastructure. In my view, you don't want to go in and put in technologies that have little chance of being used in a community. But, the fact that not enough see the use is why you may need some limited role of illustrating its application to people, some potentially limited role of subsidies to get it in place. But, be sure that there's a known demand because there's a very significant long-term cost to the community of overbuilding in terms of the O&M of it, in terms of debt capacity, and so forth. So, it's a caution . . . but thank you for making sure that that point was emphasized.

Tom Guerino, *Massachusetts Rural Development Council:* My question really deals with your minimal subsidies. When small communities either build roads or get grants for roads or wastewater plants or whatever the thing may be, the grant builds it, the user fees maintain it, and in many cases, you find the size of the community and the users of those systems too small to do your maintenance and your retrofit. Is your minimal subsidy included in that when these plants break down or they need retrofitting and you have a smaller than adequate base to maintain the facility, although the facilities may be mandated?

Mr. Fox: Again, you're emphasizing a point that I should have drawn out more clearly, and what is frequently done, particularly by the federal government, is to provide very large subsidies. For example, 80 percent subsidies to build a facility which encourages overconstruction of facilities. What you would like is a subsidy, that as a general rule, is reflecting the benefits that accrue to people outside the community from the delivery of, say, that sewage treatment facility. So, along comes the federal government and gives an 80 percent capital subsidy, encouraging overbuilding, and then leaving it to the rural community to provide the O&M on this, and it can in many cases provide a greater burden on the community and create a more serious problem. What we need is to restructure federal grants so that they emphasize the right kind of behavior, which is less capital and a lot more maintenance. And so, in my view, to have subsidies associated with O&M and much less on the capital side. So, it's the kind of subsidies that we are giving that is much of the problem.

Now, if a place really can't afford it, then in many cases, of course, maybe it's too high and the mandates themselves need to be looked at carefully. As a general rule, I'm not a big believer in mandates, except for things like sewage where there are clear benefits outside. What we're doing is imposing real burdens on those rural communities. So, changing the way the subsidies are structured is the key.

Boosting Rural Human Capital

Martin C. Jischke

I consider it a real privilege to be here. And I want to thank Mark Drabenstott, Tom Hoenig, and the rest of the staff of the Federal Reserve Bank for the invitation and for this conference.

Both Mark and Tom are graduates of Iowa State—two of many outstanding economists who have studied at Iowa State. My congratulations to Tom, Mark, and others also for beginning an important new initiative for rural America—the Center for the Study of Rural America.

We consider this center a valuable new partner with us in helping to shape the future of rural America, which will continue to be a cornerstone of our nation and our society.

While I am honored by this opportunity, I have to tell you that I feel a little like Mark Twain's "Connecticut Yankee in King Arthur's Court."

I'm not an economist; I'm an engineer. I'm not a policymaker; I'm an educator. I'm not in business—agricultural or otherwise; however, I am in the business of serving students and others—including business—agricultural and otherwise.

That's one of the things a land-grant university does. It serves others—students, first and foremost, because that's our most important responsibility. But we also serve many other segments of our society, including farmers, business and industry, cities and towns, families and individuals—through our educational programs; through our research and technology transfer programs; and through our outreach and extension programs.

At Iowa State, we believe we are measured by how well we serve others, and we point to one of our most famous alumni, George Washington Carver, as our role model in this effort. For it was Dr. Carver who said: "It is simply service that measures success."

So here I am—an engineer and an educator in an economist's court, and I'm delighted to be here.

I'm going to offer some thoughts today—thoughts from the perspective of an engineer and educator. They are also the thoughts of someone who has been involved in public higher education—and more broadly public service to a variety of people—for nearly 35 years. And for most of those 35 years, my constituency has included a substantial rural constituency.

When I came to Iowa nine years ago, the agricultural economy was just starting to climb out of the most serious depression it had experienced in half a century.

The Iowa lottery was brand new, and the joke going around was what the farmer said he would do

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The author would like to thank the following Iowa State University faculty and staff for their help on this presentation: Terry Besser, associate professor of sociology; Willis Goudy, professor of sociology; Dermot Hayes, professor of economics; Wallace Huffman, professor of economics; Maureen Kilkenny, assistant professor of economics; Peter Orazem, professor of economics; Daniel Otto, professor of economics; Kenneth Stone, professor of economics; and John Anderson, associate director, University Relations.

after winning the multimillion-dollar prize. He said, "I guess I'll just keep farming 'til it's all gone."

We've come a long ways since that time. Agriculture is stronger, although we still suffer through periods of severe economic difficulty. And overall, rural America is stronger, largely because it is more diversified economically.

However, it is clear that rural America continues to lose ground, and in a couple of ways.

We continue to lose actual ground—soil—to erosion, but I believe we have begun to get that loss under control.

More serious, however, is the ground we are losing in terms of the most important resource we need to continue the way of life that is rural America—people.

Throughout most of the 20th century, rural America has steadily lost its human capital—its people. It has been exported to urban and suburban America. And with that loss of human capital has come a declining population and relatively lower standard of living.

So how do we stem this loss, and more importantly, turn it around—to boost human capital in rural America?

That is a critical issue for rural America as we enter the new century, and I believe we have the resources to tackle this question—at research enterprises, such as the Center for the Study of Rural America; at our public universities; and in the rural areas themselves.

I would like to address this issue of boosting human capital in rural America in three parts:

First, a kind of "state of the state of rural human capital";

Second, a discussion of ways we might enhance rural human capital;

And third, some comments on how our rural areas might take advantage of enhanced human capital.

THE STATE OF THE STATE OF RURAL HUMAN CAPITAL

Not being an economist, I first head to be comfortable with what is meant by the term "human capital."

One of our ISU economists gave me this definition: Human capital is the stock of skill embodied in a person that can be "rented" on the labor market. This makes human capital distinct from other kinds of capital, such as financial capital, physical capital, even social capital.

Another question: How do we measure human capital? That turns out to be a very interesting question—and one without a simple answer.

It is not simply formal education, although that is one important measure that is often used to assess human capital. It also involves other qualities, such as: job training, years of experience on the job, skills possessed—all of which are, to some degree, measurable; and others, such as work ethic, entrepreneurship, innovativeness, creativity, and business acumen—which are more difficult to measure, but which definitely affect the quality of human capital.

For example, we know from experience that young people brought up on farms often have a very strong "can do" attitude. It may very well have to do with the nature of family farm life, where responsibility comes early in life and everyone contributes; and a farm being a kind of innovator's laboratory. If you need something—and you need it quickly—you fabricate it or create it. You can't wait to have it delivered from town.

I have no reason to doubt this, because I have seen it among our own students at Iowa State.

There is also strong anecdotal evidence that Midwestern young people have a relatively strong work ethic. The evidence comes from the employers who hire our graduates. And, indeed, there is additional evidence from employers who have operations in different parts of the country, who say the Midwestern work ethic is strongest.

And yet it is hard to quantitatively assess this "can-do" attitude and this "work ethic," so most measurements of human capital are incomplete.

Nevertheless, there are ways to measure human capital, and they include wage and earnings data—particularly as correlated against formal education, which we in higher education especially like to do because it supports the importance of our activities.

We know, for example, that bachelor's degree recipients earn, on average, 77 percent more per year than high school graduates. Advanced degree recipients earn 180 percent more. Both figures are increasing, and, in fact, the differences have doubled since 1980. Over a lifetime of work, that can mean a difference of more than $750,000 between a high school diploma and a bachelor's degree—about $1.5 million more with an advanced degree—and nearly $2.5 million more with a professional degree.

This supports our contention that we are indeed in a knowledge-based society and economy; that education enhances human capital by developing skills that lead to higher income. Knowledge and adaptability—as developed through formal education—are rewarded in today's economy.

There is evidence that human capital in rural areas lags that in urban areas, although that gap appears to be closing, not so much because of gains in the rural areas, but because of continuing problems in core urban areas. And the gap in human capital between rural and suburban areas is, in fact, widening.

This gap is due in part to the fact that rural America has exported human capital to urban America, something that has been happening consistently throughout most of the 20th century with the industrialization of America and the availability of more economic opportunities in urban areas than rural areas. And while there is recent evidence to indicate that this rural "export" of human capital may be slowing, it appears to be slowing only in rural areas that are adjacent to urban areas. It appears to be tied to urban growth, which means that truly rural areas are still declining.

We also try to compare human capital in the United States with that of the rest of the world. These kinds of data are less well developed; however, it is clear that countries with high per capita income and high GNP also correlate with higher levels of human capital as measured by levels of formal education.

Countries at the low end of the education scale—Mali, Niger, Guinea, Mozambique, for example—whose citizens receive, at most, four years of education on average—are at the low end of the per capita GNP. Conversely, the countries at the high end of the GNP scale—the U.S., Netherlands, Switzerland, New Zealand, for example—are also at the high end of average education at 15 or more years. And the scale is remarkably well correlated in terms of per capita GNP position relative to expected years of education.

Also, internationally, we are beginning to see evidence of lesser developed countries increasing their GNP and per capita income, and they're doing it on the basis of increasing their human capital. Korea and Taiwan are examples.

There is further evidence that returns to investment in human capital are growing in the United

States. Increased college-going rates in this nation—which are at an all-time high—illustrate this point.

There is little question that knowledge and adaptability—highly developed human capital—are valued in advanced economies, and students and their families understand this.

There is a widespread belief that locations with high-growth, high-wage economies have several common factors. These economies are based on robust technologies with widespread applications; computer and information technology; biotechnology and materials are examples.

They are based on technologies that add significant value, and these areas have the capacity to stay at the leading edge of change, largely because of a robust research and development infrastructure.

They also have ready access to intellectual talent—high-end human capital; a kind of "critical mass" situation which enables them to stay at the leading edge.

In the U.S., the importance of access to research and talent makes the modern research university a potent asset for this kind of economic development. We all know the examples, such as: "Silicon Valley" in California, Route 128 in Massachusetts, and "Silicon Gulch" in Austin. There are some international examples as well: software development in the Madras, India, area; and new materials development in Nagoya, Japan.

Several American universities are attempting to do the same with the new biology, which has stunning possibilities in medicine, biotechnology and, of course, value-added agriculture. Iowa State University is one of these universities. We have launched a major plant sciences initiative, to build a "critical mass" of human capital in the plant sciences so we can be a leader in the development of new technologies—*bio*-technologies—to support the most important industry in Iowa—agriculture. We make no apologies for this. In fact, we are proud of our role in the development of modern agriculture.

The importance of research to stay ahead of the wave is a very strong argument for this kind of technology-based development around universities in the United States, for that is where the majority of basic research in this nation is conducted. And it is largely public research—publicly funded and publicly available—which promotes more widespread development. It gives us this capacity to stay ahead, and it opens up many more economic opportunities.

These areas with high-growth and high-wage economies are also areas of very high human capital, which, many argue, supports the notion that human capital is even more important in this kind of development than other kinds of capital—even financial capital, because financial capital is quite mobile and our capital markets are relatively efficient in being able to put financial resources where they are needed.

I *was* going to say that I believe another indicator of just how important this technology part of our economy is becoming can be seen in comparing the rapid growth rate of the technology-rich NASDAQ with the relative flatness of the more traditional service sector-laden Dow Jones Industrial Average; however, recent developments show that it's not wise to rely on short-term stock market movements to support a particular position.

Still, one conclusion I draw from this is that knowledge and adaptability—in terms of human capital—are highly valued in advanced economies; that is, economies typified by high wages and rapid growth.

So what are the implications of this economic evolution, and, more importantly, for our purposes, what are the implications for rural America?

There are many; however, I would like to mention five.

Number 1: In today's and tomorrow's economy, human capital is more important than ever, which makes education—as our most powerful societal tool for increasing human capital—more important than ever.

That means we—as a nation, and individually as states and regions that wish to remain competitive in the new century—must make investment in education a top priority. Without it, rural areas will not grow.

And in the 21st century, the kind of education our young people will need to be successful must be broadened. Not only must it be up to date in science and technology, it must be made more global and international, and it must increase their capacity for innovation and change; become better entrepreneurs, if you will.

Number 2: Historically, the mobility of people who have high human capital has made them one of the most exported resources of rural America.

We educate them, and they leave for better opportunities. In a way, it's like value-added agriculture; however, in the case of human capital, exporting it is more like seeing your topsoil erode and wash down the Missouri River. In this sense, education is more like a value-added *resource* than a value-added product.

Given the mobility of human capital—and with it—financial capital, only those areas that offer other things—namely, physical and social capital, as well as amenities—things that are necessary to attract and retain these high human capital people—will succeed.

On the other hand, this very mobility also offers the opportunity to enhance human capital by importing it—*if* an area is attractive to high human capital people and their enterprises. That which attracts such people will also help keep them.

This is not without precedent, and on a very large scale. Iowa, and many other states were originally settled by attracting human capital with incentives, such as 160 acres and a promise for a better life. We may need a modern equivalent of the Homestead Act—with new incentives—to bring people back to rural America.

Number 3: If you pay attention to only human capital, you're missing a bigger picture.

Human capital is necessary but is not, in and of itself, sufficient for growth and development. Other kinds of capital—financial, physical, and social capital, as well as social amenities—must be harnessed and developed so that human capital can be used to its fullest, to create growth, wealth, and opportunity.

For example, the infrastructure—from highways and airports to internet access—must be developed, and we need coherent, cohesive strategies for their development, more likely on a regional scale, rather than community or even county strategies.

There is often a critical mass that is needed in order to provide these kinds of infrastructure, and at a scale that is efficient for today's economic development. In Iowa, for example, we have had a tradition of excellent schools and high human capital development in rural areas. However, our people—especially our young people—have left rural Iowa because we haven't developed these other types of capital to the extent that we are competitive in the recruitment and retention of these people.

Returns to human capital also are positively correlated with the existence of physical capital. Presumably, one of the reasons for the rural to urban migration has been the access to the physical capital that is more plentiful in cities, and which leads to higher returns to human capital. You can earn more with more and better tools. Quality of life in rural America is important, but so is easy access to a T-1 line.

Number 4—and this is specifically for agriculture and the implications for human capital for agriculture, and I hope the title of this conference—"Beyond Agriculture"—does not mean *without* agriculture, for agriculture remains important to many of us, and a number of rural areas: Make no mistake that successful farmers in this new century will bring high human capital to their work.

They will need it to be successful, in terms of: management, including the management of risk; marketing; coping with an increasingly complex regulatory environment; and adapting to new technology.

Agricultural biotechnology offers special opportunities for farming intensive rural areas. As the productivity of agriculture continues its seemingly never-ending growth, our capacity to sustain the infrastructure farming and farmers need for success in rural America will require the expansion and diversification of the rural economy.

Farmers and those who support farmers will not be able, by themselves, to sustain the schools, hospitals, recreation areas, and other amenities needed for a vibrant rural America. If that expansion and diversification is to take place, we must also confront the special challenge of dealing with the compatibility between agriculture and the new economy, for while there will be overlap, there is also the possibility of conflict.

One of the advantages of rural America is land—open land, and lots of it. Rural areas can also have a special attraction in terms of social capital—"neighbors helping neighbors," and a safe place to live, with special opportunities for recreation.

However, how can we attract more people to rural America for these amenities if we don't address—and solve—the conflicting aspects of agriculture, such as odor, air, and groundwater pollution from intensive agricultural operations? As we think about the assets of rural America, we must begin to look at them in new ways. For example, it's no longer the smell of money.

Location—in the new economy—will often be as much an amenity issue as an economic one, unless, of course, that growth relies on proximity to the source of raw materials, such as the biotech industry.

Number 5: The same forces that are driving globalization—technology, information, communication—if embraced productively, offer opportunities to rural areas to develop in new ways.

However, to compete globally will require specialization and focused strategies.

Rural areas must make strategic choices so that the capital needed for a specific audience or opportunity can be developed. No area can be all things to all people. A central question for each rural area will thus be: What is it we want to be, and what sorts of capital—human and otherwise—are needed?

Done well, such an approach offers the possibility of rural growth and development—the movement of population from urban areas into rural areas—to the benefit of rural America.

What are some of the possible strategic choices for rural areas?

Again, there are many, but here are some of the more traditional ones: retirement communities; bedroom communities for urban areas; technology-driven niches deriving from biology, information, or manufacturing; and activities that derive from the one abundant resource that rural areas *do* have, which include: land, activities such as recreation, agriculture, mining, and distribution and warehouse services, especially for those areas fortunate to be located along major transportation routes or facilities. For example, even the closing of an Air Force base could be a blessing in disguise for a rural area. That's because a military base usually provides mostly low-paying jobs for the area, while its closing might free up the airport so that it could be the catalyst to create a major warehousing and distribution center for the area.

In making such strategic choices, we must also understand more clearly the competitive advantages of rural America. Among them are: safety, cost of living, availability of land, low congestion costs, relatively higher social capital, and a high-quality work force—a work force with the potential for high human capital.

ENHANCING RURAL HUMAN CAPITAL

If rural America is to realize the potential of high human capital, how do we go about it? How do we boost the human capital in rural areas?

Here are some of my thoughts and recommendations—four to be exact.

1. Strategically build the human capital of the existing work force with continuing education and distance education

Universities, community colleges, extension, the Internet, and various state and local government training and development programs are all avenues. Lifelong learning must be a reality for rural America, as it must be everywhere else. There should be increased incentives for individual businesses and industries to develop their own human capital, instead of waiting for a major industry layoff or shutdown. And these efforts should have a focus that derives from a larger strategy for growth and development.

2. Develop the human capital of young people

Strengthen educational programs and training opportunities that ensure high human capital skills, again with an emphasis on innovativeness and the other skills that are needed to be successful globally and are competitive globally.

3. Import human capital

This may be an overlooked means of boosting human capital in rural areas. In many of our states—including Iowa—we have a shortage of human capital at virtually all levels. We need to look at immigration laws, and look at developing new incentives to attract people from other nations, especially highly skilled people. Indeed, we would do well to look at how some other nations—such as Canada—have been successful in importing high-quality human capital.

4. Create an environment designed to utilize and retain high-quality human capital

Communities and regions must think systematically and strategically about their opportunities in the new century. Bringing together the physical, social, and financial capital as well as the amenities needed to attract and retain high human capital opportunities is no small task. Most rural areas do not have the capacity to pursue several different options, so tough choices must be made. This requires unusual leadership, with the ability to see a new, more strategically focused vision, and then the capacity to implement a plan to realize the vision.

At Iowa State, we have found community and regional visioning, enhanced by modern computing technology, to be a technique that can be quite helpful, and community and regional leaders must, themselves, begin to understand this new thinking, and these new tools.

This is an area where there is assistance, such as through land-grant universities and their extension arms, as well as state departments of economic development. They can facilitate broader strategic planning, visioning, and partnering.

TAKING ADVANTAGE OF ENHANCED HUMAN CAPITAL

What are some of the characteristics of an environment that attracts and retains high human capital? Again, there are many, but let me offer three.

First, it will have a 21st century infrastructure, including, a transportation system and services that give it easy access to urban markets; easy access to information—electronic connectivity, or "closing the digital divide," if you will; and quality educational systems and health care services. It must be an infrastructure that will enable people in rural areas to ride the wave of the new economy rather than pick up the tailings of the old. To use a metaphor, communities on the concrete highways of the 20th century must move to make sure they are on the electronic highways of the new century, or they will surely be bypassed.

Second, a characteristic of such environments will be that they are built on focused strategies that have a clear vision for the future, including the kind of human resources needed for success and a strategy that focuses on amassing the other resources and amenities needed to attract and retain high human capital people.

Third, it will be an environment of partnering, or to use a word that I'm particularly fond of because I believe it is more direct in its approach, an environment of engagement.

You can't go it alone—as a person, as a business, as a community. Our human and financial resources in rural America are limited, so we must work together—pool our resources; work with others to build capacity—so that we can move faster and access more expertise.

We can build our capacity by partnering, with other communities, with the private sector, and with other resources, such as land-grant universities and community colleges and their innovation centers. These partnerships give rural areas access to knowledge, and a considerable research capacity that they wouldn't otherwise have.

Distributing the benefits of university-based research parks is an example of an item on our agenda at Iowa State. Also, because of our expertise in a particular area, Iowa State University was able to help an Iowa community save a major employer—and a $10 million annual payroll—all because we had the expertise to show that a company's economic analysis was, in fact, wrong, and closing this particular plant—a cat food plant—would actually produce the opposite effect the company wanted.

CONCLUSIONS

I'd like to close by posing this question: It's an age-old question. The question is this: Is the glass half empty—or half full?

The population shifts of the past half century have left much of middle America with a glass that is filled only halfway. Granted, it never was filled all the way, but the level has been dropping.

Rural population—as a percentage of the U.S. population—has declined in every U.S. census—save one. In 1820, it went up one-tenth of a percent from the 1810 census. It dipped *under* 25 percent in 1990, and I have seen no indication of a reverse in this trend for the 2000 census.

In my state of Iowa, the population of 44 of our 99 counties peaked in 1900 or earlier. While populations in some of these counties have started to grow again, none have returned to the heights reported 100 or more years ago. And some rural counties separated from metropolitan areas by at least one county have continued to decline in every census since 1900.

However, I would like to argue that neither answer to the question—half full or half empty—is appropriate for our discussion of the future of rural America. Instead of looking at the glass as being half full or half empty, I prefer to look at the glass as having a lot more room—room for people, and room for opportunity.

Boosting human capital in rural America and creating an environment that can utilize that human talent—that human capacity—could result in a renaissance for rural America. And in doing so, we will not only boost the prospects for the nearly 60 million people who inhabit the 80 percent of our land that we call rural America, but also ensure the continued capacity of America to feed itself, and many others. That surely is a worthy goal.

Margaret Mead wrote, "If we are to achieve a richer culture, rich in contrasting values, we must recognize the whole gamut of human potentialities, and so weave a less arbitrary social fabric, one in which each diverse human gift will find a fitting place."

Thank you.

Enhancing Rural Leadership and Institutions

Stephen Cornell

My assigned topic in this paper is leadership and institutions and how we might improve both in rural America. However, a felt obligation to be fair to the reader (or listener) compels me to begin with a disclaimer. I like to think that I know something about institutions; I may know something about leadership, which is the trickier topic. But I cannot claim to know a great deal about rural America. Or perhaps I should say: I cannot claim to know a great deal about the parts of rural America that are probably of most concern to the participants in this conference.

Let me explain. Like many of those participants, I have spent much of my professional life studying economic development in rural parts of the United States. But unlike most of them—at least so I imagine—I have spent virtually all of that time looking at a distinctive set of cases: American Indian nations. The question that has organized much of my research energy and consulting work over the last ten to 15 years has been a rather simple but specialized one: why are some American Indian nations better at economic development than others? It is a straightforward question that has turned out to have some interestingly complex answers.

You may wonder, however, just what relevance Indian reservation economic development has for rural economic development more generally. After all, the focus of this conference is not Indian country, except to the extent that most of Indian country is both rural and poor. In fact, to some people, Indian reservations seem as if they are not really part of rural America at all but constitute another country altogether. I expect that a fair number of people think that much of what applies in the rest of rural America probably doesn't apply on American Indian reservations, and vice versa. What might a student of reservation economic development have to offer at a conference such as this?

If that's what you're thinking, you've echoed certain of my own thoughts, some months ago, when Larry Meeker of the Federal Reserve Bank in Kansas City first asked me to write this paper. Indeed, that's basically what I said to Larry: what do I know about economic development in rural America? I study development on Indian reservations, including some that aren't even rural.

It took Larry a couple of tries to persuade me that there might be lessons in what I and my colleagues have learned about economic development on American Indian reservations, lessons that might be helpful in other, non-Indian, development situations. But Larry has read the work we've done; he thinks about these things a lot; and if he was convinced, then I had to figure there might be something to it. So here I am. But there's a buyer beware clause in here: if I have any demonstrated expertise, it is not on rural development per se but on Indian reservation development. I've come around to Larry's viewpoint, but you will have to be the judges of whether or not I'm right. What I can do in this paper is tell you what I and my colleagues in this

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work have seen and learned and identify the more general significance that—in my naiveté—I think I can draw from our work. But ultimately, I do not know enough to tell just where you might find helpful resonances or "aha!" moments. You'll have to decide that for yourselves.

In what follows I'm going to do several things. First, I want to explore rather briefly the general topics of leadership and institutions and the role they play in economic development. Second, I am going to examine some of the most remarkable development stories currently being put together in rural America—or anywhere else, for that matter—stories that are transforming some of the poorest communities in the country into, if not economic powerhouses, at least viable, economically productive, hopeful places. And third, I am going to try to mine those stories for lessons about leadership and institutions that may be helpful to the development effort in other parts of the rural United States.

One thing I cannot do, however, here or anywhere else: evaluate the current state of leadership and institutions in rural America. This is simply beyond both my expertise and my research resources.

LEADERSHIP AND INSTITUTIONS IN ECONOMIC DEVELOPMENT

Leadership gets a lot of attention in discussions of economic development, at least in Indian country. It is not uncommon to hear a tribal member, frustrated by the repeated banging of the head against the wall that constitutes so much of the development experience on some reservations, exclaim that "what we need is a real good leader!" or words to that effect.

This is understandable. The history of many Indian nations often is communicated as a history of leadership; figures such as Sitting Bull, Crazy Horse, Cochise, and numerous others loom large in the history of the first peoples of this land and typically are credited with nation-shaping or nation-saving deeds. It is hardly surprising that often desperately poor Indian nations might look to some as-yet-unidentified leaders to come up with the answers they have sought for so long. But the concern with leadership fits mainstream American culture as well, with its individualist ethos and its colloquial "great man" interpretations of history. We're good at celebrating leadership, better yet at criticizing it, and often in search of it, and the rural development arena is no exception. Numerous commentaries and studies treat leadership as a critical element in the development puzzle, and are concerned about where leadership will come from (Shively 1997), whether it will be up to the challenge (Chiras and Herman 1997), or how to prepare it for the tasks at hand (Murray and Dunn 1996).

Unfortunately, we are not as good at saying just what leadership is or what it does. As Ronald Hustedde pointed out nearly a decade ago in a discussion of leadership and rural development, it is difficult enough to define leadership, "and even more difficult to practice it or teach it" (1991, p. 111). One of the things I hope to explore in this paper is what leadership concretely contributes to economic development.

Institutions are easier to think about because so much thinking has already been done. While there are plenty of big questions that remain to be answered about institutions, it is now well established that they are a critical, determining factor in the economic fortunes of human societies. From studies of both historical and contemporary economic growth across nations (Barro 1991; Egnal 1996; Knack and Keefer 1995; North 1990) to studies of international investment (La Porta et al. 1997, 1998), from studies of how communities can successfully manage common-property irrigation systems (Ostrom 1992) to the study of Chinese collective agriculture (Oberschall 1990), there has been a convergence in much of social science around the theme that institutions—the authoritative rules societies put in place to organize individual and collective behavior—determine much of the ability of human societies at all levels to act effectively in pursuit of their purposes, including economic purposes (DiMaggio and Powell 1991). They matter through their relative capacity or incapacity for organizing cooperation, resolving conflicts, guiding action into productive channels, reducing free-riding by societal members and, more generally, getting things done.

Institutions have received a good deal of attention in the rural development literature in the United States as well, although at times the concern appears to be largely with the organization of development efforts—for example, with intergovernmental relationships, changing power distributions between national and local levels of government, or policy concentrations on certain sectors such as agriculture (Galston and Baehler 1995; Radin et al. 1996; Murray and Dunn 1996)—paying relatively little attention to the issue of how institutional structures shape behavior, including the behavior of investors. Part of my purpose in this paper is to point to some of the other institutional issues that rural developers face.

But first: the Indian case.

THE INDIAN RESERVATION DEVELOPMENT CONTEXT

Let's look for a minute at Indian country, a term of convenience that—if we depart slightly from its precise legal meaning—can be used to embrace both Indian reservations and other predominantly indigenous communities, such as Alaska Native villages, in the United States.[1] First of all, it is hugely diverse. Just as the term "rural America" suggests a largely fictional commonality among rural places, so the term "Indian country" suggests a consistency among Indian places that is only partially the case. The full set of Indian reservations ranges from the Gila River Indian Community on the outskirts of Phoenix to the Pine Ridge Sioux Reservation in a rural region of South Dakota. Indian country includes tiny California rancherias with populations of under 100 and the Navajo Reservation with a population of close to 200,000. Natural resource endowments, social conditions, demographics, and cultural practices all vary enormously across Indian country. One of the important things these diverse places have in common, however, is a distinctive relationship with the federal government and with the United States that both constrains them—sometimes severely—in ways other communities in the country do not experience and, on occasion, offers them opportunities that other communities do not have.

The vast majority of them also share both a 20th century history and a 21st century present of poverty. We all know that, in recent decades, rural America as a whole has tended to lag behind the rest of the country economically, with generally higher rates of unemployment, lower wages, lower household income, and higher rates of poverty (*Agriculture Fact Book* 98; Murray and Dunn 1996; Radin et al.1996). As we also know, this aggregate picture hides massive variation, from bright spots where economic development is vigorous and appears sustainable to areas where little is happening economically and little seems likely to happen any time soon (Fitchin 1991).

Most Indian reservations are part of rural America and fit this overall picture. They, too, lag behind the rest of the country on major economic indicators, and they, too, are various. But the degree to which they lag behind the rest of the country is dramatic: the aggregate pattern is far worse than it is for rural America as a whole.

By way of illustration: For administrative purposes, the federal Bureau of Indian Affairs (BIA) divides the United States into a number of "administrative areas." Table 1 shows aggregate unemploy-

Table 1

UNEMPLOYMENT RATES BY BUREAU OF INDIAN AFFAIRS (BIA) AREA, 1997

BIA area	Unemployed as percent of labor force
Aberdeen	71
Albuquerque	29
Anadarko	35
Billings	67
Eastern	53
Juneau	55
Minneapolis	46
Muskogee	44
Navajo	58
Phoenix	47
Portland	53
Sacramento	47

Note: BIA labor force and unemployment estimates are given by reservation and aggregated by administrative area. Figures are self-reported by tribes and, given tribes' variable resources and capacities to gather such data and the inherent difficulty of gathering labor force data in large rural areas, are difficult to evaluate and should be used with caution. They nonetheless are useful indicators of the general state of reservation economies.

Source: Bureau of Indian Affairs 1997.

ment figures by Bureau of Indian Affairs administrative areas in 1997, the most recent year for which I have such data. These figures are for BIA service populations, which include persons resident "on or near" reservations who are eligible to use that particular tribe's BIA-funded services. In other words, these figures include most of the tribal membership that is resident on or near those reservations that fall within each area.

Clearly the overall picture is grim. In the Aberdeen and Billings areas, more than two-thirds of the reservation labor force is unemployed, and even in the area with the lowest aggregate unemployment—Albuquerque—the percentage is still approaching one third. There is no reason to believe that in the last couple of years these numbers have significantly changed.

This is only one indicator; we could review others. For present purposes, suffice it to say that the unemployment indicator is hardly anomalous: taken as a whole, Indian reservations are much poorer not only than metropolitan America but than the rest of rural America as well. And they not only show high indicators of poverty; they also show high indices of many of the social problems that we normally associate with entrenched poverty: ill health, poor housing, crime, domestic violence, suicide, and so forth.

But the other characteristic of rural America that I've already noted is also true of Indian country: there is massive variation from the mean. On the one hand, there are some reservations with astonishingly high unemployment rates. For example, in 1997 unemployment at the Cheyenne River Sioux Reservation in the Dakotas was reported at 80 percent, 77 percent at Rocky Boy's in Montana, 62 percent at Red Lake Chippewa. On the other hand, the Jicarilla Apaches in New Mexico reported 15 percent unemployment, Cochiti Pueblo reported 7 percent, and the Grand Traverse Band of Ottawa and Chippewa Indians in Michigan reported no unemployment at all in its labor force of 2,200 people (Bureau of Indian Affairs 1997).

This variation is apparent not only in static, snapshot form but also longitudinally. Consider the 1980s. This is an interesting period to consider because it was a time when rural America in general was not doing well. The burst of rural population growth in the 1970s had run its course, returning rural America to the preceding, extended pattern of population loss, while rural poverty rates, after dropping through much of the 1970s, increased in the following decade (Rural Sociological Society 1993).[3] It was a tough decade for Indian country as well, with the percentage of all reservation Indian adults with incomes in excess of the poverty rate falling, if not by much. But the variation was substantial. Table 2 shows changes in the percentage of adults with incomes in excess of BIA-determined poverty levels in the period from 1977 to 1989 for ten Indian reservations, chosen to illustrate the range.

The overall picture, then, conveys a compelling message: Indian country is poor, and often desperately so. But the variation within that picture likewise conveys a message: It is not uniformly poor, and the range of variation is high. To the social scientist, here is where the interest lies. The variation suggests that there's a story here, and perhaps an instructive one.

Some Stories

In fact, there is more than a single story here; there is a set of stories. Here are a few of them.

The Citizen Potawatomi Nation of Oklahoma is one of the striking success stories in Indian country today. In the mid-1970s, according to its current chairman, John Barrett, this tribe had $550 in the bank, high unemployment among tribal members, and no recent history of successful economic development. Twenty-five years later, as we enter the 21st century, the tribe owns the First National Bank of Shawnee, Oklahoma, as well as a number of retail and media enterprises in the region. It is a major regional employer that provides jobs not only for its own membership but for nonmembers as well. The most recent data I have, for 1997, show an unemployment rate of 10 percent—high enough, but dramatically lower than the average for Indian reservations. In 1997, only 16 percent of tribal members holding Potawatomi jobs were employed in the government sector (Bureau of Indian Affairs 1997). This is one of the lowest figures in the country for

Table 2

CHANGES IN POVERTY LEVELS ON SELECTED AMERICAN INDIAN RESERVATIONS, 1977-89

Reservation	Percent change in income, 1977-89
Flathead (MT)	16
Ft. Apache (AZ)	12
Cochiti Pueblo (NM)	10
Mescalero (NM)	9
Muckleshoot (WA)	6
Pine Ridge (SD)	-1
San Carlos (AZ)	-7
Rosebud (SD)	-10
Yakama (WA)	-12
Northern Cheyenne (MT)	-15
All reservations	-1

Note: Change in income refers to the change in the percentage of adults with incomes in excess of BIA-determined poverty levels ($5,000 in 1977; $7,000 in 1989).

Source: Bureau of Indian Affairs 1989.

Indian reservations, suggesting significant productive economic activity. By Barrett's account, the tribe has moved from pariah status ("lazy Indians") to a position of recognized political and social power in the region.

In the 1960s, the Mississippi Band of Choctaw Indians—located in a poor region of eastern Mississippi and lacking significant natural resources or market access—was mired in poverty. Unemployment was close to 30 percent and less than half of Choctaw families were earning at least $1,000 a year. A third of adult Choctaws had no formal education; fewer than 10 percent had finished high school. The better educated members—particularly men—were steadily leaving the reservation for better economic opportunities elsewhere (Ferrara 1998). Today, the tribe has created more than 6,000 on-reservation jobs. Only a quarter of them are in tribal government; the rest are in productive enterprise, from manufacturing to service industries. The Choctaws have become the largest employer in east central Mississippi and one of the ten largest in the state. Every day, thousands of Mississippians—black and white—drive onto the Choctaw reservation to take jobs in Choctaw-owned and -operated businesses. Over the last decade, incomes in the Choctaw region of Mississippi have been rising faster than the state average, and unemployment has fallen to just over half the state average, thanks in large measure to Choctaw-led economic development. Importantly, the tribe has put together this impressive development record while maintaining a high degree of Choctaw language retention, even among young tribal members, and a continuing engagement with traditional cultural practices (Ferrara 1998; NCAI 1998, p. 8; U.S. Bureau of the Census 1993).

During the 1980s, as reservation economic conditions in general were deteriorating across Indian country, the White Mountain Apache Tribe in Arizona was a successful operator of nine tribally owned enterprises, including a ski resort, a trophy elk hunt, an aerospace manufacturing enterprise, and a major forest and sawmill operation. Their timber enterprise was among the most productive in the western United States, regularly outperforming Weyerhaeuser and other private operators, and they were managing their huge ponderosa pine forest for sustained multiple use. The tribe had become one of the economic anchors of east central Arizona. Its ski resort was filling motels in non-Indian towns during the previously slow winter months, and local chambers of commerce, when considering the economic future of the region, were looking to the Apaches as critical partners in planning and development. This is a striking turnaround in Indian-white relations in that part of Arizona, known for its history of violent conflict.[3]

These stories are striking, but they are by no means the only ones of their kind in Indian country. A significant number of tribes have broken away from the long-standing pattern of reservation poverty, building productive and sustainable economies in the process. This phenomenon became especially notable in the 1980s, a decade in which federal support for Indian country was declining and unemployment among all reservation Indians rose (Bureau of Indian Affairs 1989). Among others, the Confederated Salish and Kootenai Tribes of the Flathead Reservation in Montana, the Confederated Tribes of the Warm Springs Reservation in Oregon, the Muckleshoots in Washington, and both Cochiti Pueblo and the Mescalero Apaches in New Mexico showed significant economic improvements during that decade (Cornell and Kalt 1992, p. 4). Only in the Muckleshoot case was gaming a major factor in economic growth in this period. And the trend has continued. In the 1990s, tribes such as the Grand Traverse Band of Ottawa and Chippewa Indians in Michigan, the Eastern Cherokees in North Carolina, the Gila River Indian Community in Arizona, and others have stepped aboard the development train.

To be sure, these stories do not constitute a majority of Indian nations—not by a long shot—but there are enough of them for us to talk seriously about a major change under way in Indian country: a significant group of Indian nations has broken away from the prevailing pattern of relentless poverty and hopelessness and is writing a new, dramatic, and hopeful chapter in rural economic development.

How might we account for these exceptions to the overall pattern?

A RESEARCH ENTERPRISE

A dozen years ago, an economist named Joseph Kalt and I decided to try to find out. We were at Harvard University, where Joe still teaches, and we shared some interests in the political economy of Indian country. We were aware that something was afoot out there: things were changing. Some of the stories I've just related hadn't been written yet—they were under way—but there was growing evidence of this breakaway pattern. We wanted to find out what was going on. How could we account for it? Why were some Indian nations "better," so to speak, at economic development than others were, and were the differences transferable?

This was an interesting question for obvious reasons but in part because some of our top-of-the-head answers didn't seem to fit the economic development evidence. In the 1980s a lot of common development wisdom assumed that those nations with good natural resources or good market access would be successful developers. But the Mississippi Choctaws, with very little in the way of natural resources and poor market access, were putting on a scintillating development performance, while the Crow Tribe of Montana, with perhaps the most lavish set of natural resources of any tribe in the country and crossed by a major interstate highway, was locked in the development doldrums.

Another assumption was that better education would lead to better development. But some of the most impressive development stories from the 1980s were being written by tribes with educational achievement below the reservation mean, including the White Mountain Apache Tribe in Arizona and the Mississippi Choctaws.

Another idea was that access to financial capital was a key element in getting development under way. But the tribes we were looking at seemed to say something else: what was important about them was that they appeared to be capable of attracting capital, not that they started out with it. Capital was clearly important, but something else preceded capital availability and facilitated access to dollars. Other tribes had difficulty persuading investors to invest, but these had solved the problem.

So we were intrigued. We started a research enterprise called the Harvard Project on American Indian Economic Development to see if we could find some answers. We used three research strategies: (1) systematic comparison of economic development policies and outcomes in a field sample of a dozen or so Indian nations, (2) statistical analysis of such data as we could assemble on the 70 largest tribes in the country, and (3) *pro bono* consulting projects carried out by graduate students on tribe-specific policy issues identified as critical by various Indian nations.

FINDINGS AND IMPLICATIONS

A number of results have emerged from this research.[4] The following summary is not intended as comprehensive, although it includes much of what we've learned. Its purpose instead is to organize our findings in terms that seem applicable to other rural development situations. Some may confirm things that are strongly suspected—perhaps even well established—for rural America. Some may be new. But these are the ones that strike me, with limited knowledge beyond the Indian case, as helpful.

(1) Local control matters

In the Indian case, the issue is sovereignty: the right of Indian nations to control their own strategic decisions, resources, internal affairs, relationships with other sovereigns, and so forth—in short, to govern themselves. This is a matter, at one and the same time, of law (the legal right to self-rule), of policy (active federal support of that right), and of practice (tribal assertions of self-rule). After a dozen years of work on this topic, Harvard project researchers have been unable to find a single case of an Indian nation demonstrating sustained, positive economic performance in which somebody other than the Indian nation itself is making the major decisions about resource allocations, development strategy, and related matters.

This is supported by all of the cases I've outlined above. For example, the economic turnaround for the White Mountain Apache Tribe began when the tribe put itself in the driver's seat in reservation affairs. After years of federal control of tribal decision making, in the 1960s the Apaches moved aggressively to shift the federal government from a decision-making role to a resource role. As the tribe began to make its own decisions, assemble strategic plans that reflected its own priorities, and take responsibility for its own actions, its economic performance began—and continued—to improve.

In the case of rural economic development more generally, the issue is devolution: shifting decision-making power downward in the governance structure from federal and even state levels to regional and local levels. This is a major theme of the Integrated Rural Development and "new governance" paradigms (Murray and Dunn 1996; Radin et al. 1996), and it finds strong support from the Indian experience. The research evidence from Indian country, in fact, is unequivocal: the chances of sustained economic development decline rapidly the further decision-making moves from the community whose future is at stake.

The reasons for the importance of local control are several, not least the fact that local decision making puts the development agenda in local hands. David Lester, Executive Director of the Council of Energy Resource Tribes, once said that "economic development is about becoming what you want to be."[5] The corollary is that it is not about becoming what others want you to be. If so, then control over the development agenda is a crucial element in successful economic development.

But perhaps the most important reason for local control is simply the link between decisions and their consequences. Outsiders seldom bear the consequences of their decisions about the economic future of a community, and consequently there is little in the way of a dependable—i.e., disciplined—learning curve producing better decisions over time. When decisions move into the hands of those whose future is at stake, the decision makers themselves begin to bear the consequences of their decisions, reaping the rewards of good decisions and paying the price of bad ones. The result is that, over time, the quality of the decisions improves.[6] This certainly has been the experience in Native America; there is little reason to believe it would not be the same elsewhere.[7]

The local control finding has implications of its own, likewise supported by Indian country evidence. It is the reason why, other things equal, block grants make more sense than project funding; why the appropriate role for federal agencies in local development is not a decision-making role but a resource one; and why local-level capacity building is so important.

(2) Institutions matter

Devolving decision-making power to local communities has another implication, one that emerges clearly from the Indian development experience. Decision-making power that is not backed up by effective institutions of governance is unlikely to lead to sustained economic development. In other words, institutions matter, and in Indian country, they matter a great deal. The second finding that has emerged from this research is that sovereignty—local control—that is not backed up with effective institutions of governance is unlikely to yield sustainable economic development.

This is evident in the cases I've already discussed. John Barrett, chairman of the Citizen Potawatomi Nation, claims that the key to economic transformation in the Potawatomi case was reform in tribal governing institutions. Barrett tells how, in the 1970s, as a new member of the tribal council, he tried to persuade non-Indian businesses to relocate to poor Potawatomi communities. They were interested, he says, but they kept asking difficult questions. Do you have a legal code? Do you have a tribal court? What happens if I have a dispute with the tribe over how I do business? Will I be treated fairly in that court? What happens to my relationship with the tribe when there's a change in tribal administrations? Will my investment be secure? And so forth. Barrett returned to the tribal council with sobering news: we have got to reform our institutions if we're going to attract investment. It took a while, but eventually the tribe put in place the kinds of institutions that communicated to investors that the Citizen Potawatomi Nation was a safe and attractive place to invest. The result has been a transformation in tribal economic and social fortunes. More than 20 years after those early efforts, Barrett is crystal clear on what the lesson is: "If you're not talking about constitutional reform," he says, "you're not in the economic development ballgame."[8]

A number of factors joined together to produce the Mississippi Choctaw success story, among them skilled, assertive, and creative leadership; smart recruitment of potential investors; the tribe's vigorous and long-term focus on education, including tribal takeover of numerous educational services, leading to a much more educated and skilled labor force; and an insistence on tribal determination of strategic priorities and tribal control of reservation affairs. Also involved: political reorganization. The tribe undertook constitutional reform in the 1970s, leading to separations of powers, and made a major effort to professionalize and streamline the tribal bureaucracy. In essence, the Choctaws made themselves the most attractive place to invest in the region, with the result that not only have joint venture partners and other investors brought money and jobs onto the reservation, but tribal members are returning to the reservation in significant numbers (Ferrara 1998, p. 83).

"Institutions," writes Douglass North, who has contributed a great deal to our thinking on the topic, "are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" (1990, p. 3). Effective institutions reduce uncertainty and bring stability into human relationships. Whether it's a commercial code, an independent court system, a reliable structure of governmental decision making, or a dependable system for implementing the decisions government makes, institutions make sustained, productive economic activity possible.

Our research suggests that, in Indian country at least, the institutional foundation of successful economic development is characterized by at least four elements. The first is ***stability in the rules themselves*** so that potential investors know the rules of the game won't change with changing administrations or local conditions. The second is ***depoliticizing day-to-day business decisions.*** Restricting political decision making to strategic issues while putting day-to-day business decisions in the hands of professionals separates constituent service to voters from fiduciary service to shareholders, thus increasing the chances of profitability (Jorgensen and Taylor 2000). In Indian country, at least, tribally owned and operated enterprises that are buffered from political interference by elected leaders are four times as likely to be profitable as those that aren't (Cornell and Kalt 1992). The third is ***depoliticizing dispute resolution.*** Indian nations that are able to establish genuinely independent, strong courts or other dispute resolution mechanisms do significantly better, other things equal, than those that have no such mechanisms. Our evidence shows that the depoliticization of dispute resolution has bottom-line effects on reservation unemployment (Cornell and Kalt 1992). The fourth element is ***bureaucratic structures and procedures that can get things done predictably and reliably.***

Why are institutions so important? Institutions send a message to potential investors. If the message is positive (stability, depoliticized business management and dispute resolution, procedural reliability, etc.), the chances of investment rise. If the message is negative (the reverse of the above parenthetical), the chances of investment fall. And I should emphasize that I intend here a broadly inclusive meaning of the term "investors," embracing not only those with dollars but those with ideas, energy, time, or any other resource that can be an asset to development. Thus, local residents of only average means are as much potential investors in the future of their communities as anyone else is. Importantly, they are likely to make investment decisions on much the same basis as outsiders or as those with substantial financial means: where is my investment—of time, energy, ideas, *or* money—likely to be most productive and secure?

Institutions represent, in effect, a major part of the community's answer to that question, and therefore are one of the central pivots on which development turns. Furthermore, the significance of effective local institutions of governance rises dramatically as local control rises. Devolution puts a premium on local institutional efficacy; without it, devolution simply leads to increased uncertainty for investors, who are asked to leave a realm of relative predictability (national institutions) to work in the unknown.

(3) Strategic thinking matters

Indian country has seldom been characterized by strategic thinking. There are good reasons for this. If political and economic control lies largely in the hands of outsiders, what's the point of strategic thinking? Without the resources and powers necessary to implement a thought-through development strategy, why spend the time coming up with one?

Another reason is the often desperate economic and social conditions of many Indian reservations. Such conditions place enormous pressures on elected tribal leadership to "get something going." The "something" can be almost anything, as long as it produces jobs. Faced with typically short terms of office, frequent political turnover, and an endless stream of petitioners looking for relief, tribal leaders tend to look for quick fixes for development problems. The development strategy, in effect, becomes band-aids and firefighting. It pursues whatever can be funded, typically via federal grants; pays less attention to sustaining businesses than to starting them; and puts a premium on hitting home runs instead of building economies incrementally. It also pays little attention to long-term goals, priorities, or concerns.

The alternative is strategic thinking: a systematic examination not only of assets and opportunities but of priorities and concerns. What kind of society do we hope to build? What do we want to change? What do we want to preserve or protect? What kinds of prices are we willing to pay for development, and what kinds of prices are we unwilling to pay? For example, many Indian nations vigorously pursue development options but are wary of those that might involve net losses in political sovereignty. Their strategic thinking has to take that into account. Others are concerned about environmental impacts, about significant increases in the numbers of nonmembers present on the reservation, about levels of indebtedness, and other issues. Unless such considerations are thought through, decision making occurs in a strategic vacuum, simply reacting to the pressures of the moment, the mood of the voters, the funding decisions made thousands of miles away by people with divergent interests and limited local knowledge.

A strategic approach to development involves a shift from reactive thinking to proactive thinking (focusing not only on circumstances but also on what we want to create); from short-term thinking to long-term thinking (looking not for quick fixes but for strategic development trajectories); from opportunistic thinking toward systemic thinking (asking not what can be funded but what fits our conception of our community); from a narrow problem focus to a broader societal focus (thinking not simply in terms of jobs and income but of the development of the community as a whole). Obviously communities have to deal with the hard realities of opportunities and assets as well; not all strategic visions can be achieved. But this is not merely a visionary exercise, producing little more than cerebral popcorn (tastes great during the meeting but doesn't last long). Instead, it produces a set of concrete criteria by which development decisions and choices among options can be made.

Which is not to say that communities should not be opportunistic—it's to say that opportunism alone is a limited strategy. The larger picture matters. For example, the Grand Traverse Band of Ottawa and Chippewa Indians in Michigan—one of the more successful tribes in the country—took advantage of the 1988 Indian Gaming Regulatory Act to open a casino: certainly an opportunistic move. But what is interesting about the tribe's initiative is the strategic context within which they consciously acted. When I asked them in the early 1990s if they had an overall development strategy, their response was immediate: to use gaming revenues to build an economy that could survive the end of gaming revenues. This was not all there was to it—the tribe also had a sense of what kinds of economic activities it wanted to enter and could realistically consider; a sense of priorities regarding links between economic development and other community issues; and a thoughtful list of concerns that it needed to bear in mind as it moved forward. The point is that its move into gaming was neither conceived independently nor functioned separately from a larger conception of what the tribe was trying to do, how it wanted to go about it, and where the potential dangers lay. In this case, there was the potential federal prohibition of casino gaming on the one hand, leading to a shutdown, and the potential loosening of state-imposed gaming constraints on the other, leading to increased competition with non-Indian entities. The tribe's development thinking took both possibilities into account, and planned accordingly.[9] The fact that the tribe went into gaming is unimportant to the present discussion. The point is not to pursue any particular strategy; it is to think strategically.

(4) Leadership matters

In case after case across Indian country, we have seen leadership playing a significant role in economic development, but that role is not everywhere the same, and leadership sometimes looks very different from one reservation to another. For example, the western Apache peoples have a long tradition of strong, charismatic leadership embodied in single individuals. Their indigenous governing structures—the ways they governed themselves under conditions of freedom—reflected that. They were relatively simple structures that put a great deal of power in the hands of single executives. The legislature or council was relatively weak, and there was no provision for an independent judicial system; dispute resolution rested largely in the hands of the leader.

The Lakota peoples of the northern Plains governed themselves very differently. They seldom concentrated power in the hands of a single person on more than a temporary or task-specific basis. Their executives served at the pleasure of a relatively powerful council—it was in essence a parliamentary system. There was a strong and politically independent judicial and law enforcement arm in the *akicita* or warrior societies, who were charged with making sure that the executives observed the law along with everyone else.

Leadership in these cases looked very different. The traditional Apache leader was something of an autocrat, while the Lakota leader had to be a consensus builder (Cornell and Kalt 1995). Leadership, according to these examples at least, is not a one-size-fits-all proposition.

These traditions continue to find support in Apache and Lakota communities today. The Apaches have a contemporary history of strong chief executives who serve for long periods and exercise enormous influence in reservation affairs. The Lakota, on the other hand, have been stuck with a set of contemporary governing institutions—

designed and imposed by outsiders—that are at significant odds with indigenous ideas about how authority ought to be organized and exercised. The current system is a strong chief executive system with weak legislative and judicial branches—nothing like traditional Lakota government—and the survival of Lakota tradition is apparent in its lack of legitimacy among tribal members. They do not feel it is their government, and it has difficulty mobilizing their energies for development or very much else.

Part of the problem this points to is institutional design: governing institutions need to have legitimacy if they are going to produce results. One way to establish legitimacy is to pay attention in the design of those institutions to what constituents believe is appropriate. But the other part of it has to do with leadership: leaders need legitimacy, too, or they will find themselves without any followers. Over the last 50 years, almost no chief executive has ever been re-elected on the Pine Ridge Sioux reservation in South Dakota, home to the Oglala Lakota people. On the White Mountain Apache Reservation in Arizona, one individual has served as tribal chairman for more than 20 of the last 30 years. Institutions and leadership work arm in arm.

But what do legitimate and effective leaders actually *do* in the economic development puzzle? Our evidence suggests several things.[10]

They are precipitators. Over and over again, in tracing the history of the more economically successful Indian nations, we have run into accounts of times when some individual or small group of persons said, in effect, "Enough! We're not doing things this way anymore!" This is what happened when the White Mountain Apache Tribe forced the federal government to relinquish the primary decision-making role on their reservation. It is what happened when the Mississippi Choctaws turned their attention to the reform of political institutions. And it is happening more and more frequently around Indian country today as a new generation of leaders turns its attention to escaping dependency on federal dollars and the constraints that dependency always brings with it.

In short, development frequently requires new kinds of behavior and new kinds of actions. Breaking with past habits or established ways of doing business often requires an innovator or a set of innovators willing to stick their necks out and do things differently. This is not intended to be a "great man" theory of history, but merely to recognize that new circumstances often demand new responses, and somebody has to start.

They are interpreters. In the 1980s, as bingo began to make its way into Indian country, the Mississippi Choctaws decided not to participate. There was no significant history of games of chance in Choctaw society and most Choctaws did not view gaming as an appropriate economic development strategy. Then, in 1988, Congress passed the Indian Gaming Regulatory Act. Throughout Indian country, gaming became not only a matter of economics but a matter of politics: entering the gaming industry became a demonstration of tribal sovereignty. Philip Martin, Chairman of the Mississippi Choctaw Tribe, presented it to his people in those terms and the attitude toward gaming changed. Today the Choctaw nation is a successful gaming tribe.

Leaders interpret circumstances, events, and opportunities to their people. The interpretations they make can have significant impacts on what communities are or are not willing to do.

They are conduits for information. When John Barrett of the Citizen Potawatomi Tribe discovered that investors wanted to see major institutional changes before they would bet on the Potawatomi future, he brought that information back to the nation. The information constituted a new perspective on economic development, one that put political institutions at the heart of the development process. In fact, Barrett was playing three leadership roles at once: bringing new and important information to the tribe, interpreting rejection by investors not as anti-Potawatomi but as anti-instability and risk, and precipitating action by demanding change, by making clear that the tribe could not continue to act in the same old ways and expect to be economically successful.

They make themselves dispensable. We have worked with one tribe that has a long tradition of strong leaders and has been governed by one or two powerful individuals for the last couple of decades. Unfortunately, it also has a long history of underdeveloped governing institutions. Given that fact, the tribe has been lucky that the individuals who have led it have tended to be honest and capable. Eventually, however, the tribe chose a leader who attempted to turn the office to his own advantage. The problem the tribe faced was twofold: it had set up no institutional structures—rules, procedures, a court capable of enforcing them—that could protect the tribe from corrupt or incompetent leadership. And few other people had leadership experience and could step into the breach.

The most effective leaders, over the long haul, are those that (1) encourage leadership on the part of others, and (2) build governing institutions that are not themselves dependent on good leadership. In doing these two things, they make themselves dispensable, empower their communities, and make successful development more likely.

CONCLUSION

In reviewing our findings from Indian country, I have focused on four things: local control, effective institutions, strategic thinking, and leadership. But in fact, these are interrelated. Good governing institutions, for example, make local control effective; without them, it is toothless. And leadership is often what it takes if a community is to move from band-aids and firefighting to a strategic vision and plan of action.

How do you enhance both? As far as institutions are concerned, I have tried to make clear at least some of what distinguishes "good" or effective institutions from "bad" or ineffective ones. What we need is models to work with: institutional structures that work and clear indications of which ones work best in what sorts of community circumstances. This is in part a research task: we need systematic, comparative analysis that explores the three-way fit between communities, institutional structures, and circumstantial demands.

Leadership, as always, is harder to get a grip on. The fundamental task, I think, is educational. Leadership may be difficult to teach as an art, and it may be dependent to some degree on intangible qualities that some people have and some do not. But surely it can be taught as understanding and technique. Those who understand the critical role of institutions in economic development, for example, are more likely to take the lead in creating and defending them.

Having said all of this, however, I have to return to the disclaimer with which I began: my limited expertise prevents me from knowing just what, in all of it, might be most useful to the participants in this conference. Are our findings relevant? Or is the Indian country context too distinctive to produce transferable lessons?

Certainly the differences are substantial. Some are legal: Indian nations both enjoy a degree of sovereignty that not all other rural communities share and suffer from a degree of external political control that few other rural communities experience. Some are strategic: In their development decisions, most Indian nations attach a far higher degree of importance than other rural communities do to the maintenance and maximization of political autonomy and the protection of long-standing cultural practices and resources. Some are cultural: Language, kinship relations, some patterns of land use, collective identity, and other cultural differences can complicate the development task. And some are historical: The embittering legacy of colonization, catastrophic violence, comprehensive land and resource loss, lethal attacks on indigenous culture, and rampant federal paternalism is itself a developmental obstacle that Indian nations struggle daily to overcome.

But there are similarities as well. For the most part, Indian nations in the United States are small, rural communities. Many of them, like other rural communities, have economic histories of massive, externally controlled resource extraction. They, too, have experienced significant demographic losses in the latter half of the 20th century, especially among the talented young. Like others, they face the uncertain impacts of a rapidly changing, global, technologically sophisticated economy. And like other parts of rural America, they are searching for the secrets of a particular kind of success: How do you create an increased measure of prosperity that does not, in the process of its achievement, destroy what you most value in your land, your community, and your way of life? The fact that some of them seem to have found those secrets is enough to suggest that we pay attention to what they've done.

ENDNOTES

[1] In February 1998, the U.S. Supreme Court ruled that lands held by Native entities under the terms of the Alaska Native Claims Settlement Act (ANCSA) are not "Indian country." This in effect prevents Alaska tribes from exercising over ANCSA lands certain powers commonly exercised on reservation lands by Indian nations in the lower 48 states. See Alaska v. Native Village of Venetie Tribal Government, 118 S. Ct. 948 (1998). For discussion of the implications of this decision for Native peoples in Alaska, see Kendall-Miller 1998. On the legal meaning of the term "Indian country," see Pevar 1992.

[2] The long-term trend, however, is unclear. As Nelson and Beyers (1998) note, the first half of the 1990s showed significant population growth in much of the rural West, including some relatively remote regions, with income and employment sometimes rising quite dramatically as well.

[3] For some discussion of the White Mountain Apache case, see Cornell and Kalt 1995.

[4] Harvard Project research findings are reported in a number of places; see especially Cornell and Kalt (1992, 1995, 1997, 1998, in press) and Cornell and Gil-Swedberg 1995.

[5] In his presentation at the Reservation Economic Summit (RES/99), Phoenix, Arizona, March 9, 1999.

[6] This is the familiar principal-agent phenomenon in political economy. For discussion of the issue in one Indian development sector, see Krepps and Caves 1994; more generally, see Jensen and Meckling 1976.

[7] Indeed, the Indian findings on local control—or what in the Indian case amounts to self-rule—are hardly anomalous. For interesting national-level examples from Eastern Europe, see Rona-Tas 1998, and Stark 1996.

[8] This story is drawn largely from John Barrett's speech at the conference on "Building American Indian Nations for the 21st Century," Tucson, Arizona, November 12, 1999. The quotation is from my telephone conversation with Barrett, August 1999.

[9] This account draws on my field notes from visits to the Grand Traverse Band in the early 1990s and from subsequent conversations with tribal leaders.

[10] The remainder of this section draws on Begay, Cornell, and Jorgensen, forthcoming.

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Enhancing Rural Leadership and Institutions: Discussion

Moderator: Larry Meeker

Mr. Meeker: We have time for one question, and then we'll take a break.

Joe Dudick, *Rural Communities, Inc.*: I have a question really for the panel. That is, how do we reestablish the ruling class, if you want to call it that, when the factor that killed off the ruling class is probably not going to change, and let me explain what I mean by that. When I was a kid growing up in a small rural community not too many years ago, we had three locally owned banks. The men that controlled the economic destiny lived in the community. We had a number of small, I'll call them "old economy" industries, manufacturing and that sort of thing, locally owned that created good family-sustaining jobs. This was before the age of the big box stores, so Main Street was loaded with lots of locally owned shops and businesses. These were the people that served on the library board and the school board that really set the agenda and had the vision for that community. People traveled to places, so they brought back ideas. They contributed money to, and helped raise money for, all of the things that were needed to keep that community viable. What's happened over the past quarter century across rural America, as a result of economic consolidation and globalization, is that those businesses, those banks, those stores, those manufacturing plants have either gone out of business because they couldn't compete or they've been bought up by somebody somewhere else, as was mentioned here, so those decisions as to that entity are now made by somebody in New York, or Zurich, or God knows where, with no commitment to that place. We're not going to turn the tide back on consolidation of the economy and globalization. In that regard, how can we reestablish that ruling class in rural communities across rural America?

Mr. Meeker: I'll let Steve respond to this and we'll have panel discussion later on.

Mr. Cornell: Well, it's bad to argue by anecdote, but as you were talking I was reminded of the story of Solidarity, the union in Poland that eventually ended in the collapse of the Communist Regime there, and it was started by a shipworker who leapt over the fence and yelled to the workers, "Let's do it differently!" His name was Lech Walenza.

For one thing, you mentioned where the ideas come from and so forth. We've been hearing about telecommunications and the Internet and so forth. The ideas are now available. We may not be fully wired in rural America, but increasingly, there are no boundaries on ideas. They're available and what we simply need are people who are willing to act on the basis of those ideas. And I personally think that can come from anywhere. And certainly we've seen that in communities where it's not always who you might have expected who eventually stand up and say, "Look, let's do things differently, and I'll get a group of people together and we'll talk about it, and we'll go talk to the other folks and make this thing happen."

I think it's less a ruling-class notion than simply an idea of where do you find the innovators, and most people have the capacity to innovate. It just has to be released.

Mr. Meeker: Thank you very much. I think it's been an outstanding panel. We will break now and come back here sharp at 3:30 to conclude this panel session for the afternoon.

Creating New Economic Opportunities: The Competitive Advantages of Rural America In the Next Century

Andrew M. Isserman

My assignment for this paper was straightforward: You "should achieve one essential mission: identify where rural America's comparative advantage may lie in the coming century." "Peer into the future" and determine "from where the new economic engines for rural America are going to come." Mission impossible? Perhaps. Mission essential? Definitely. As Nathan Keyfitz, the noted demographer at Harvard University once wrote, "Standing against this assertion of the absolute impossibility of knowing the future is the absolute necessity of a picture of the future if behavior is to make any sense" (Keyfitz).

Completing the mission requires going beyond the safe boundaries of empirical social science research and entering the misty realm of forecasting, story telling, and fantasy. The story I shall tell spans two centuries. It begins in 1900 to give us some perspective on what it means to think ahead a century and to recall the perils of rural life in the midcontinent wilderness only 100 years ago. Then, more humble, we jump to 1950 and modern statistics. They will help us understand today's rural competitive advantage from the way it has manifested itself over the past half century. That way, it turns out, is often spectacular and sometimes contradicts the very core of how we think of rural America.

Rural America has important competitive advantages for far more than a place to grow or a place to extract natural resources. Its advantages derive from matters of geography, demography, and policy as well as economics. A century ago these advantages were less evident, and rural life was fragile.

1900

We begin with a woman's memoir, *Rachel Calof's Story*, subtitled Jewish Homesteader on the Northern Plains (Rikoon). Her words are a sober testament to rural life and human mettle a hundred years ago. The difference between her conditions and ours shows us the huge chasm that we must leap to move ahead a century, even speculatively in our mind's eye. Listen to her:

> Our lives were uncomplicated. Our purpose was survival, and through survival the hope that somehow the future would treat us more kindly than the past (p. 67).
>
> The winters dominated our lives. It seemed that all our accomplishments during the warm season had to be directed to lasting through this one season. Even though this summer justified optimism in our view of the future, we were still in a weak position for the coming ordeal of winter (p. 69).
>
> We knew that sudden and fearful misfortune was ever close on the prairie. We were terribly vulnerable and we never forgot it. . . . This year [1900] we had planted most of the land in wheat. We had great expectations. . . . A better life awaited just ahead. Dear reader, it was not to be. . . . The storm passed as

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> quickly as it came, and we surveyed the wreckage it had left behind. Ruin and desolation lay all about us. No wheat crop, no hay, the horses dead, the shack full of water, the windows broken out. The soil itself was torn and warped. I suppose this was as good a time and reason as any to give up the long, unequal struggle. But we had become resilient and tempered by hardships and, surprisingly, our first emotions were joy and thankfulness that we had been spared. We had come very close to success this time. Next year might well be the year of fulfillment (pp. 75-77).

> I must say that personally the most dependable state of affairs that I knew during the many years I lived on the prairie was pregnancy, and soon I was again carrying my usual load. . . . I felt certain that this time I would not come out of it alive (p. 73).

The ordeal of winter, the long, unequal struggle to survive, the threat of sudden misfortune, the danger of childbearing, and the thin line between tragedy and happiness—all tempered by gratitude for being spared and the hope for a kinder future—that was Rachel Calof's rural America of 1900. True, rural America was diverse then as it is now. Yet we can reasonably assume that daily life for rural Americans in 2100 will differ as much from today's as the Calofs did.

A timid thinker cannot leap from Rachel's reality—the nearest doctor 60 miles and three days away, the lifesaving properties of straw when the winter fuel is gone—to our reality of medical advice provided through the Internet with medicines and other city goods delivered overnight by airplane. The rare creative soul who can make such a fantastic leap probably leaves behind all tethers to social science, not to mention all connection to an audience dedicated to the pragmatic consideration of economic realities and public policy directions.

1950

I feel more confident trying to peer ahead 50 years, aided not by autobiography but by modern statistics and a thought experiment. Imagine we had convened here in 1950. What would we have had to anticipate in order to predict how rural America would evolve from 1950 to today? What can we learn about the changes ahead by looking backward and examining the changes of the past 50 years? What has happened to the rural America of 1950?

The 1950 census marked the debut of the standard metropolitan area. The interagency Federal Committee on Standard Metropolitan Areas developed this concept because "for many types of social and economic analysis it is necessary to consider as a unit the entire population in and around the city whose activities form an integrated social and economic system" (U.S. Department of Commerce 1953, p. 27). Then and now the basic building blocks are counties. A metropolitan area had at least one city with 50,000 inhabitants or more to which were added contiguous counties if "they are essentially metropolitan in character and socially and economically integrated with the central city." The criteria for inclusion concerned the number of "nonagricultural workers," population density, commuting to and from the county with the largest city in the metropolitan area, and the volume of telephone calls to that county (an average of four or more calls per month per phone subscriber).

Here was the beginning of the statistical separation of the United States into places that were parts of metropolitan areas and those that were not. This bifurcation continues today and shapes the information we receive and, therefore, how we think about rural areas. Nonmetropolitan areas are not defined in terms of rural character. They are simply counties that lack a medium-size city or a qualifying combination of population density and commuting. The term nonmetropolitan has caught on to such a degree that even the U.S. Department of Agriculture routinely includes in reports words such as "the terms rural and nonmetro are used interchangeably in this report" (USDA, p. 25).

Figure 1
METROPOLITAN AMERICA, 1950

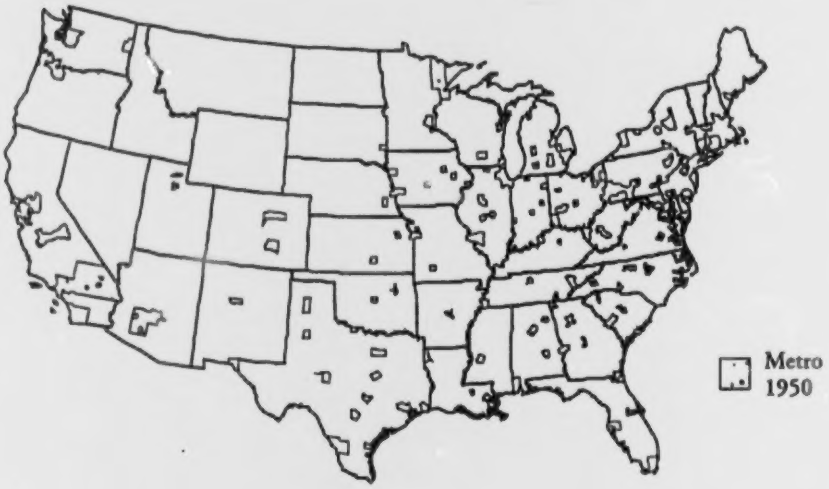
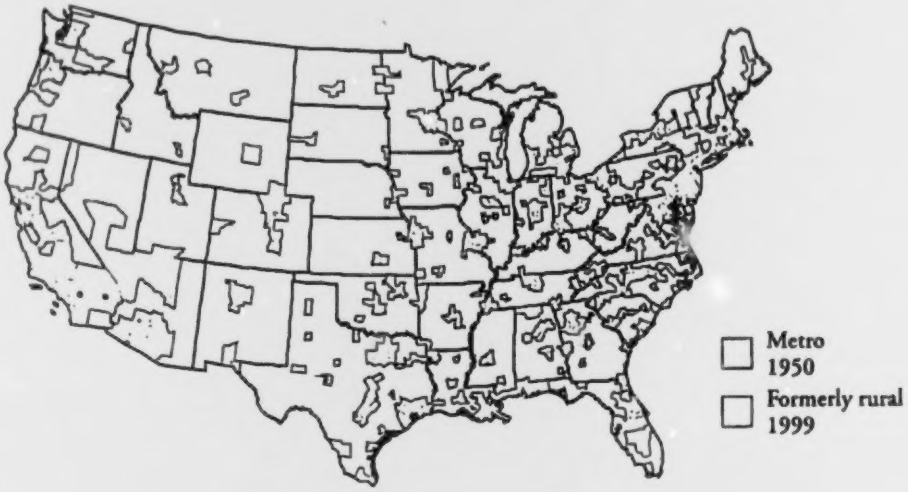


Figure 2
METROPOLITAN AMERICA, 1999


Metro
1950
Formerly rural
1999

Using these definitions, the 1950 census revealed that urban America had grown faster than rural America. It leaped 21 percent between 1940 and 1950, adding 15 million people. Rural America was not declining. Its population increased 7 percent, adding 4 million people. Yet there were 12 percent fewer farms in 1950, and 7 million fewer people living on farms. Rural America was home to 44 percent of the U.S. population in 1950, down from 47 percent a decade before.[1]

Against this background of relative rural decline (similar to present trends), had I argued in 1950 that rural America had certain key competitive advantages and would grow faster over the next half century than urban America, I probably would not have been taken seriously. But I would have been right! From 1950 through 1999, rural America grew 89 percent compared to 72 percent for urban America. In absolute terms the numbers are almost equal: rural America added 58 million people, and urban America 61 million people. If I had predicted that 146 million people would be living in urban America by 1999 and 124 million in rural America, I would have been almost exactly on the mark.[2]

How can that be? Census Bureau statistics say that about 20 percent of the U.S. population is in rural America in 1999, not the 46 percent of my totally valid "prediction." The explanation is simple. Between 1950 and the present, the Office of Management and Budget took 564 counties out of rural America and reclassified them as metropolitan (Figures 1 and 2). Today some 71 million people, one-fourth the U.S. population, live in what was rural America in 1950 but is considered urban America today.

Thus, when we contemplate the future of rural America and new policy directions, we need to be careful of what rural America we are discussing. Much attention has focused on the brain drain of people moving from rural America to the employment opportunities and city lights of urban America. In the metropolitanization of 1950s rural America, however, the people did not leave. Urban America came to them. One-third of the residents in 1950 rural America would be absorbed into urban America without leaving home.

The magnitude of this force on the future of rural America should not be underestimated. Rural America has great competitive advantages for urban development, not the least of which is abundant land available in large lots, generally uncontaminated and undeveloped, at relatively low prices.

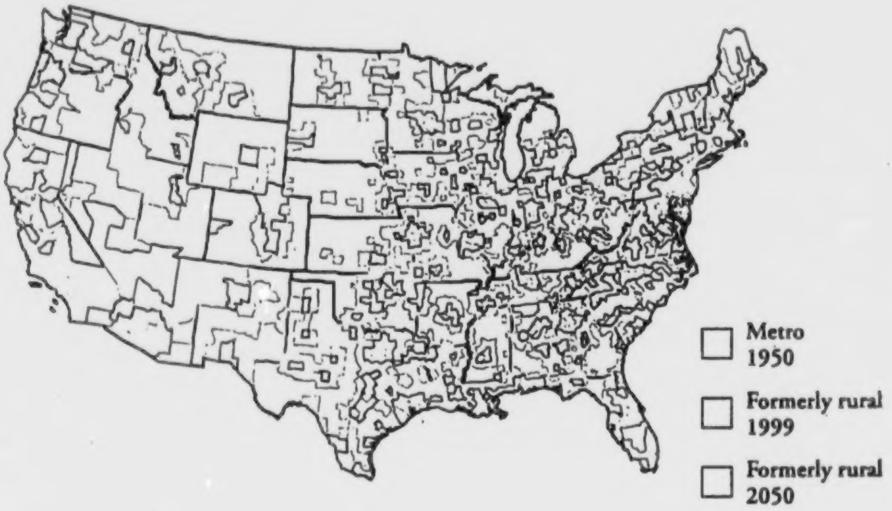
FORMERLY RURAL AMERICA

The implication of this lesson from the 1950s is powerful. Much of what we consider rural America today will be urban America in 2050. The cause is twofold. Part is geographical destiny, the result of being near metropolitan areas. Part is economic growth centered on small cities. As rural areas grow in employment and population, they cross the statistical divide of the Office of Management and Budget. They become metropolitan areas and disappear from the statistics and roll call of rural America.

Perhaps we should recognize at least three categories—urban, formerly rural, and still rural—when we analyze the condition and future of rural America and consider policies to promote its desirable evolution. We might even dare to call them nonrural, mixed rural, and rural. We conscientiously track urban versus rural, but we can learn further lessons about rural development by keeping track of formerly rural as well.

This metropolitanization of rural America creates tremendous employment opportunity. Formerly rural America added 21 million jobs between 1969 and 1997. Its increase of 136 percent far outpaced the rest of urban America, which grew 59 percent, and the rest of rural America, which grew 55 percent.[3] Looked at in another way, formerly rural America has added more jobs since 1969 than cur-

Figure 3
METROPOLITAN AMERICA, 2050



rently exist in the entire state of California. Formerly rural America is a vibrant place, and much of today's rural America will become formerly rural.

There is no reason to expect the metropolitanization of rural America to cease. The interesting question is what percent of today's rural America is likely to turn, or be turned, to urban within the next 50 years? A guess, a very crude initial estimate, can be made using the rural-urban continuum county code developed by the U.S. Department of Agriculture (Butler and Beale). Three of its nine groups are rural counties physically adjacent to metropolitan areas and economically linked to them.

More than half today's rural population lives in these adjacent counties, 31 million people. Another 7 million live in rural areas whose counties include city populations of 20,000 or more; with some growth, they could become metropolitan, too. In fact, only 31 percent of the people in today's rural America live outside these adjacent counties and small cities. Merely 6 percent of the nation's population, that rural core is nevertheless a multitude: 17 million rural folks, almost equal to the population of New York, the third largest state.[4]

If the lesson of the 1950s holds true, and there is no sign that the outward expansion of large cities and the growth of small cities are abating, the metropolitan geography of 2050 will look very different from today's. The version in Figure 3 adds the adjacent counties and small city counties to the metropolitan landscape. In fact, not all these counties will become metropolitan, and some that are shown as remaining rural will become metropolitan. In the previous half century, the home counties of 36 percent of the rural population became formerly rural, not 69 percent as suggested by Figure 3.

The rural America of 1950 found room for another 59 million people. Rural Clark County, Nevada, jumped from 48,000 people to 1.2 million in becoming metropolitan Las Vegas; rural Pima County, Arizona, expanded from 141,000 to 804,000 in becoming metropolitan Tucson; and rural Gwinnett County, Georgia, went from 32,000 to 546,000 in being absorbed into metropolitan Atlanta. Where will the next extra 60 million folks locate in rural America, or 40 million, or 80 million? Where will the next Las Vegas and Tucson be? Whatever the answers, one thing is certain: much economic opportunity will occur for rural Americans as large cities spread and new ones are created.

THE ECONOMIC CHARACTER OF RURAL AMERICA

What happens to the character of rural America and its economic activities when they become absorbed into metropolitan America? Before answering this question, we need a working definition of rural America. The official dichotomy between metropolitan and nonmetropolitan counties is of very limited value. What should we expect when rural is simply defined as that which does not qualify to be metropolitan, that which lacks a metropolitan character? Recall that rural is literally a nonplace, nonmetropolitan because it does not meet certain requirements of population size, density, and commuting.

Yet rural is, more than a non-sense, an absence of certain city and suburb conditions. We probably share a good sense of what rural is. It goes beyond another, sometimes-used census definition. Rural includes anything that is not in a town or city of 2,500 residents or more, another nondefinition that defines rural by what it is not. Perhaps it is more fruitful to start with economic function, not with population clusters and commuting. There are certain things that rural areas do well.

Farms, ranches, forests, and mines—these are the loci of rural activities, the old, old economy, the primary sector. They cannot be done with lots of people around. People trample the corn, complain of livestock odor and dust, start forest fires, and initiate lawsuits when blasting or mine subsidence damages their homes. The primary sector and related secondary activities in manufacturing like food processing, saw milling, and farm machinery create economic clusters from which rural regions can prosper. They are unique to rural areas because they are resource-based.

Rural areas also are the loci of economic activities for which we seek out separation, a location apart. The list is long and varied. Most are relatively self-contained communities. Some are located apart by deliberate government policy, including Native American reservations, university campuses, military bases, and prisons. Others are located apart by the private sector, including manufacturing branch plants, tourism resorts, and retirement villages.

Rural America is also the home of reserves, places set aside. Here we find most of our national parks, wilderness areas, wildlife sanctuaries, national and state forests, flood plains, regional landfills, test grounds, strategic petroleum storage depots, national rivers and trails, and missile ranges.

Finally, no sketch of rural America can be complete without small towns and cities, the places where the pace is a bit slower, the crimes fewer, and all the children above average. Like rural America in general, they can be sketched in rich, happy colors or dreary grim ones. Both portraits are true to life somewhere, sometimes.

Rural America has certain economic disadvantages—a small labor force and lower population density. They translate into less local market demand, more limited production capacity, and fewer business services. Rural America lacks those city amenities most prized by readers of *Money* magazine, when they rank the nation's best places to live each year. Missing are professional major league sports teams, five-star restaurants, symphonies, opera, dance, and theater, museums, classical music stations, art galleries, large public libraries, zoos, amusement parks, and more. Rural America also does not offer recent college graduates large numbers of their peers to join in work and play. It does not offer the frail elderly first-rate, highly specialized medical care. It does not offer parents of young children outstanding college-preparatory schools with a full spectrum of advanced placement courses and foreign languages. In short, almost by definition, rural America cannot compete with large population concentrations in making possible a great specialization and variety in both production and consumption.

On the other hand, rural America has numerous competitive advantages. It offers its own amenities—natural areas, outdoor recreation, broad vistas, peaceful sunsets, and what might be called AMENities—freedom from congestion, crime, commuting, pollution, change, diversity, and the conflicts of urban life. It also offers lower land costs, lower building costs, lower housing prices, lower labor costs, lower security costs, lower parking costs, and lower taxes. Since the 1930s, these cost advantages have been translated into public policy designed to attract manufacturing branch plants and their postindustrial variants including back offices, reservation services, and information centers.

The Internet follows the telephone, airplane, and interstate highway as the latest innovation to lower greatly the cost of communication and transportation to and from rural areas. With these lower costs, people ask, will there be a rural renaissance? Will rural areas become more competitive? The advantages to rural residents as consumers are evident; the huge inventory of three or more massive bookstores is now available in most parts of rural America, to cite but one traditional city amenity. The advantage to rural areas as producers is less clear. True, the Internet can bring the market to rural producers, but can rural producers achieve the scale necessary for warehouses, order fulfillment, and other aspects of Internet sales? The answer appears to be yes, judging by statistics that show how rural America has adapted to opportunities in the past half century.

THE METROPOLITANIZATION OF RURAL AMERICA

Rural America disappears into metropolitan America in the way we keep and analyze statistics; but in a far truer sense, it does not. If we define rural America in terms of its hallmark industries, its small town lifestyle, and its open spaces, much of rural America is doing well and prospering within metropolitan America. The dichotomy of metropolitan-nonmetropolitan is a false one and does us a disservice when we incorrectly take those words to mean urban-rural or city-country. When we think about rural America, when we search for rural economic opportunities and formulate rural policy options, we should not stop at the official metropolitan line. The border between HUD and USDA, between urban and rural policy, should not be drawn there. We need a reunification of rural America in the way we think about rural America.

Rural policy and urban policy should recognize the interaction and juxtaposition of urban and rural activities and urban and rural people within metropolitan areas. The point here is not only farmers markets, bed and breakfasts, country inns, property taxation and farmland, annexation, growth control, and conflicts of lifestyles between new and established residents on the urban fringe—important as those things are—but also and especially the viability of hundreds of thousands, if not millions, of rural jobs within metropolitan areas. Much of rural America exists within metropolitan America.

Farming is the ultimate example. Using as the measure of outcome, the ability of farmers to stay in farming, farming does best not in rural America but in formerly rural America. In 1997, there were

Table 1

FARMING EMPLOYMENT BY COUNTY TYPE

County type	Number of counties	Jobs 1969	Jobs 1997	Change	Retention (percent)	Farm/total 1969 (percent)	Farm/total 1997 (percent)
Rural	2,249	2,549,462	1,800,021	-749,441	71	14.6	6.6
Formerly rural	557	963,620	784,752	-178,868	81	6.3	2.2
Urban 1950	274	450,092	357,494	-92,598	79	.8	.6
All	3,080	3,963,174	2,942,267	-1,020,907	74	4.4	1.9

Sources: *Regional Economic Information System* (USDC 1999b) and author's calculations.

785,000 farmers and farm employees in the metropolitan counties of the former rural America. The number is down from 964,000 in 1969. Yet that retention rate of 81 percent is considerably higher than the 71 percent rate in rural America. There are even 357,000 farmers within the boundaries of 1950 metropolitan America, and their retention rate is 79 percent.[5] Thus, well over a million people farm within today's metropolitan America, almost two-fifths of the nation's farmers (Table 1). The country is alive and well in the city.

The relatively high retention rates of metropolitan farmers suggest that there might be some advantages to farming in the proximity of cities. Three testable hypotheses come quickly to mind. In metropolitan areas members of farm households are more likely to obtain and hold off-farm jobs. Also, some farmers can sell off pieces of land from time to time to raise capital and funds for other purposes. Finally, some farmers may be able to provide specialty crops and other goods to local markets and wholesalers.

Manufacturing, on the other hand, does particularly well in rural America. Together rural America and formerly rural America added over 2 million manufacturing jobs between 1969 and 1997, while 1950 urban America lost more than 3 million jobs.[6] Rural and formerly rural America now have 84 percent as many manufacturing jobs as urban America, up from 48 percent in less than three decades (Table 2).

Formerly rural America has the fastest growth rate for manufacturing jobs, 42 percent over 28 years. Next comes rural America. Whereas it may have once seemed heroic to attract manufacturing jobs to rural areas, rural America now has proportionately more manufacturing jobs than either former rural America or urban America. There is an important implication here for the potential of rural America to secure jobs in the new economy. Since rural America can supply the labor force, infrastructure, and logistics sufficient for manufacturing activities, it ought to be able to do the same for similar activities involved in e-commerce warehouses and distribution centers.

The manufacturing case also shows how certain urban jobs and industries are spun off to rural areas. In the next half century, other jobs will follow—also

Table 2

MANUFACTURING EMPLOYMENT BY COUNTY TYPE

County type	Number of counties	Jobs 1969	Jobs 1997	Change	Percent Change	Mfg/total 1969 (percent)	Mfg/total 1997 (percent)
Rural	2,249	3,559,962	4,387,759	827,797	23	20.3	16.1
Formerly rural	557	3,132,441	4,449,079	1,316,638	42	20.5	12.3
Urban 1950	274	13,816,570	10,536,902	-3,279,668	-24	23.9	11.5
All	3,080	20,508,973	19,373,740	-1,135,233	-6	22.7	12.5

Sources: *Regional Economic Information System* (USDC 1999b) and author's calculations.

drawn to the competitive advantages of rural areas, also made possible by technological change.

THE NEW ECONOMY AND THE OLD

Much of the new economy is so new that it does not yet appear in the latest federal statistics. The most recent *County Business Patterns* provides data for 1997, a time before the Internet, e-commerce, dot.com, and the digital divide became part of popular culture and commercial life. Yet we can use the 1997 data to get some clues about rural America's potential role in the new economy.

A good starting point is national CBP data for 1990 and 1997. The high-wage industries that created the most jobs over that period were health services (2.5 million jobs), engineering and management services (708,000), computer and data processing services (680,000), wholesale trade (482,000), and security and commodity brokers (264,000). How did rural America fare in attracting these jobs? Are there signs in the 1997 data that rural America is and will actively participate in the new economy?

Answering these questions is not just a matter of looking up data. Much employment information within CBP is suppressed by the Census Bureau to protect the confidentiality of companies. The numbers shown in Table 3 result from estimating the employment in each county and then adding up the numbers by county for urban, formerly rural, and rural America.[7] The table shows the percentage of each high-wage growth industry found in each type of county and its location quotients (LQ). Take the location quotient of 1.49 for security and commodity brokers in urban areas as an example. Formed by dividing the urban areas' share of the nation's employment in security and commodity brokers (88 percent) by the urban areas' share of the nation's total employment (59 percent), the location quotient of 1.49 literally means that urban areas have one and a half times their proportionate share of security and commodity broker jobs. Whenever an area has a greater share of a particular industry than it does of all jobs, the location quotient is greater than one; hence, the area is relatively specialized in that industry and presumably has a competitive advantage.

Table 3

SHARES OF NATIONAL EMPLOYMENT AND LOCATION QUOTIENTS FOR SELECTED GROWTH INDUSTRIES, 1997

		Rural		Formerly rural		Urban	
Industry	SIC	Percent	LQ	Percent	LQ	Percent	LQ
Total employment	——	18	1.00	23	1.00	59	1.00
Health services	8000	16	.92	21	.92	62	1.06
Wholesale trade	5000, 5100	11	.63	19	.83	70	1.18
Catalog and mail-order houses	5961	10	.57	19	.81	71	1.20
Engineering and management services	8700	7	.38	21	.92	72	1.22
Help supply services	7363	6	.36	22	.93	72	1.22
Computer and data processing services	7370	3	.15	20	.86	77	1.31
Security and commodity brokers	6200	2	.13	9	.41	88	1.49
Prepackaged software	7372	2	.12	17	.74	81	1.36

Sources: *County Business Patterns* 1997 (USDC 1999a) and author's calculations.

Both rural areas and formerly rural areas lag behind the 1950 urban areas in every growth industry examined here. The urban areas have more than their proportionate share, and the rural areas lag more than the formerly rural ones. For example, urban America has 136 percent of its share of the software industry, formerly rural America has 74 percent, and rural America has only 12 percent.

Yet there are signs of rural economic opportunity in these numbers. Sticking with the software industry, 2 percent of all jobs are in rural areas and 19 percent in rural or formerly rural areas. Existence proves possibility. These numbers mean the stories of "lone eagles" are true. People can do new economy jobs in rural areas. In 1997, there were 5,700 software jobs in rural areas and another 44,000 in formerly rural areas. The broader industry, computer and data services, provided 38,000 jobs in rural areas and another 290,000 in formerly rural areas. Catalog sales, not a growth industry, but shown as a possible precursor and indicator of Internet sales, yielded 22,000 and 40,000 jobs in rural and formerly rural areas, respectively. Wholesale trade, perhaps an indicator of the capacity to handle e-commerce order fulfillment facilities, provided 758,000 rural jobs. Health services is the only growth industry in which rural America already has close to its share. Indeed, hospitals are the single largest employers in many rural counties.

The traditional competitive advantage of rural areas in primary and related secondary industries remains very important and leaps from Table 4. These results are consistent with our mental sketch of rural America. For example, rural America has three times its share of meatpacking, poultry processing, and other meat products, once an urban

Table 4

SHARES OF NATIONAL EMPLOYMENT AND LOCATION QUOTIENTS FOR SELECTED OLD INDUSTRIES, 1997

		Rural		Formerly rural		Urban	
Industry	SIC	Percent	LQ	Percent	LQ	Percent	LQ
Forestry	800	62	3.52	22	.97	16	.26
Farming	100	61	3.48	27	1.14	12	.21
Lumber and wood products	2400	55	3.11	24	1.04	21	.36
Meat products	2010	54	3.05	21	.92	25	.42
Mining	1000–1400	42	2.41	21	.91	36	.61
Food and kindred products	2000	32	1.81	23	.98	45	.77
Apparel and other textile products	2300	31	1.76	16	.70	53	.89
Motor vehicles and equipment	3710	23	1.33	25	1.08	52	.87
Hotels and motels	7010	19	1.08	31	1.31	50	.85
Total employment	——	18	1.00	23	1.00	59	1.00

Sources: *County Business Patterns* 1997 (USDC 1999a) and author's calculations.

activity, too. Perhaps the newest development is the motor vehicle industry. Urban areas still have the majority of jobs, but rural areas now have 191,000 jobs, or 23 percent. The rural America of 1950 has close to half the automobile manufacturing jobs—something probably unthinkable 50 years ago. The results for hotels and motels give credence to the many claims that travelers and tourists can be important parts of rural economies. Hotels and motels alone provide some 310,000 jobs in rural areas, and the rural America of 1950 has half the nation's hotel and motel employment.

Taken together, these results for the old and new economy suggest that rural America abounds in opportunity. Since rural areas have succeeded in providing a large enough workforce for the automobile industry, they ought to be able to do the same for significant components of the new economy. There seems to be very little that is not possible in rural America. Traditionally rural industries continue to provide jobs; traditionally urban jobs flourish in rural areas, too; and new economy jobs do not stop at the city line either. One should not be sanguine about the prospects of all rural places, and those that are not doing well are the topic of another section.

SENIOR CITIZENS AND IMMIGRANTS

The aging of America promises to provide a demographic source of economic opportunity for rural America. Many an economic development professional has already recognized that the retired elderly create jobs when they move into an area and

Table 5

POPULATION CHANGE BY TYPE OF AREA, 1990-99

Measure	Rural	Formerly rural	Urban	All
Increase in the elderly population, 1990-99	450,054	1,517,212	1,489,499	3,456,765
Percent elderly increase, 1990-99	6%	21%	9%	11%
Elderly increase as share of total increase	12%	13%	17%	14%
Elderly share of total population, 1999	15%	12%	12%	13%
Elderly location quotient	1.15	.96	.96	1.00
Net domestic migration, 1990-99	1,901,062	5,372,487	-7,272,875	674
Percent population increase, 1990-99	8%	19%	6%	10%

Sources: Population estimates available at www.census.gov and author's calculations.

spend their retirement pensions, social security income, and savings. Many places have already entered the competition to entice elderly migrants as a deliberate economic development strategy.

The prospects for revitalizing rural America with the money of the Baby Boom generation seem enormous. The Census Bureau projects almost a doubling of the elderly population from 2000 to 2025. There will be 63 million elderly in 2025, 28 million more than today (U.S. Bureau of the Census 2000). They are perhaps the wealthiest retired generation in the nation's history and are expected to seek out retirement homes and condominiums in desirable settings.

Census estimates for the 1990s do not provide data on county-level migration of the elderly. There are data on changes in the number of elderly, but those numbers combine the effects of younger age groups crossing the 65-year line ("aging in place") with the effects of migration. The basic facts seem to be that rural America had the lowest percentage increase in elderly population in the 1990s when compared to formerly rural America and urban America (Table 5). The elderly constitute a greater share of the rural population, but that can stem from the outmigration of younger people as well as from the inmigration of retirees. In fact, the increase in the elderly population was a smaller part of the total population increase in rural areas than elsewhere.[8]

The history of specific areas is far more instructive than gross aggregates to understand the power of the elderly to transform rural America. Four criteria pinpoint 36 illustrative counties. Their populations increased at least 10 percent in the 1990s, their elderly populations grew at a faster rate than their total populations and increased by at least 1,000 people, and the elderly share of their 1999 populations is more than 19.2 percent, one and a half times the national elderly share. All the counties that meet these criteria were rural in 1950, and half remain

Table 6
NET FOREIGN IMMIGRATION BY COUNTY TYPE, 1990-99

County type	Number of counties	Net immigration	Percent of immigration	LQ	Immig./Pop. change (percent)
Rural	2,292	342,027	5	.23	9
Formerly rural	574	1,391,422	19	.71	12
Urban	274	5,744,574	77	1.43	65
All	3,141	7,478,078	100	1.00	31

Sources: Population estimates available at www.census.gov and author's calculations.

rural today. Seventeen are in Florida, five in Texas, four in North Carolina, two in Arizona and Washington, and one each in six other states.

Statistics for Lee County, Florida, demonstrate the economic potential of Gray Growth. In 1950, Lee was a rural county of 23,000 residents, not adjacent to any metropolitan area. Today it has over 400,000 residents, and its 103,000 senior citizens are 26 percent of its population. Its elderly population increased 20,000 or 24 percent between 1990 and 1999. In short, 50 years sufficed to transform a small rural county into the Fort Myers-Cape Coral metropolitan area.

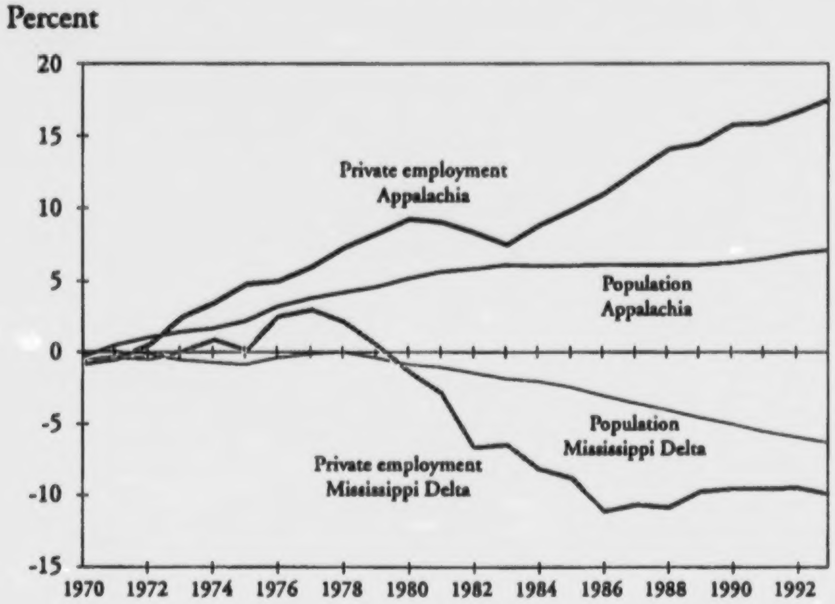
Other rural counties had similar experiences. Some like Lee became the core of new metropolitan areas: Brevard, Florida, from 24,000 residents in 1950 to 470,000 in 1999 with 20 percent elderly; Mohave, Arizona, from 8,500 to 134,000 and 22 percent elderly; and Barnstable, Massachusetts, from 47,000 to 213,000 and 23 percent elderly. Others remain rural, among them: Citrus, Florida, from 6,000 residents to 116,000 and 31 percent elderly; Polk, Texas, from 16,000 to 73,000 and 20 percent elderly; Henderson, North Carolina, from 31,000 to 83,000 and 22 percent elderly; Garland, Arkansas, from 47,000 to 84,000 and 23 percent elderly; and Clallam, Washington, from 26,000 to 65,000 and 21 percent elderly. All these counties and others with similar histories were not adjacent to a 1950 metropolitan county. They grew on their own, propelled to a large degree by senior citizens.

Keeping this half century perspective in mind, there seems to be no reason that portions of today's rural America will not have similar senior momentum. Some rural counties will add tens of thousands of residents. The USDA (1995) has identified 190 rural counties that experienced 15 percent or more inmigration of people 60 or older in the 1980s. With the doubling of the elderly population in the next 25 years, many more rural places can expect to become retirement destinations.

Immigration is another major demographic force. Highly focused in its location pattern, it seems at first glance to be an urban phenomenon, much like some of the growth industries in Table 3. More than three-quarters of immigrants between 1990 and 1999 lived in the 1950 urban areas, and only 5 percent live in today's rural areas (Table 6). Yet that small fraction is 342,000 people and accounts for 9 percent of total rural population change over the decade.

Chart 1

GROWTH OF THE RURAL COUNTIES OF APPALACHIA AND THE LOWER MISSISSIPPI DELTA RELATIVE TO THEIR TWINS, 1969-93



Statistics for individual counties show the importance of recent immigration as a local economic force. There are 76 counties nationally for which net immigration between 1990 and 1999 equals at least 5 percent of their 1999 populations. They include 31 rural counties, 19 formerly rural counties, and 26 urban counties. Pushing the criterion to 10 percent leaves 20 counties, of which nine are rural, two formerly rural, and nine urban.

The nine metropolitan immigration magnets are famous. They are all counties of the Miami, New York, San Francisco, and Los Angeles areas. The top two are Miami-Dade County and Kings County (Brooklyn, New York City), whose recent immigration of roughly 330,000 each is 15 percent of their 1999 populations. Far less well known are rural counties such as Presidio, Texas, whose 1,900 recent immigrants are 21 percent of the population; Santa Cruz, Arizona, 5,300 immigrants and 14 percent; Imperial, California, 19,000 immigrants and 13 percent; Franklin, Washington, 4,700 immigrants and 10 percent; and Seward, Kansas, 2,000 immigrants and 10 percent.

The 2000 census will confirm what many suspect from case studies, personal observation, and the 1990 census: a great and growing role of immigrants in the rural economy. Immigrant workers are extremely important to farming, meatpacking, other food production, textiles and apparel, and several service industries. Immigrants also are key rural

Table 7

POPULATION OF DISTRESSED COUNTIES BY COUNTY TYPE

County type	Number of counties	Population 1999	Poverty 1993	Unemployed 1996	Total type population	Percent located in distressed
Rural	258	5,402,992	1,635,591	257,869	53,925,500	10.0
Formerly rural	10	1,955,011	596,840	126,894	71,833,306	2.7
Urban	4	4,357,484	1,385,033	182,429	146,885,222	3.0
All	272	11,715,487	3,617,464	567,192	272,644,028	4.3

Sources: *U.S. counties 1998* (USDC 1999c), www.census.gov, and author's calculations.

professionals, most visibly perhaps the many foreign-trained physicians in underserved rural areas.

RURAL PLACES LEFT BEHIND

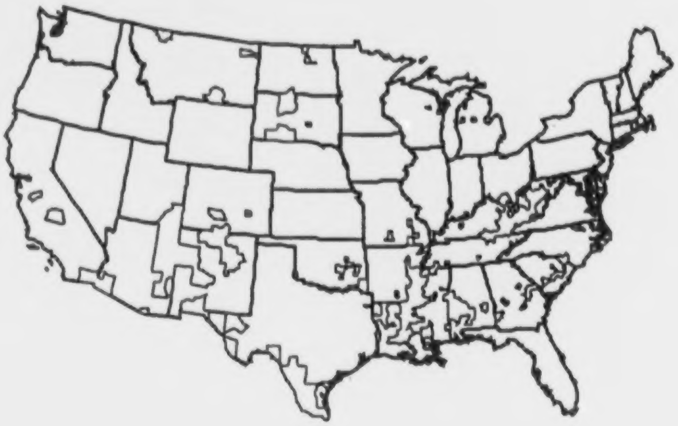
A competitive advantage of rural America in the policy realm is that its problems are of a small enough scale that affordable public policy can make a big difference. For evidence consider the experience of the Appalachian Regional Commission, this nation's only sustained attempt at national regional development policy. Official Appalachia has 22 million people, 42 percent in rural areas. Since 1965, a coordinated federal-state effort has built over 2,000 miles of highways and 800 miles of access roads, constructed or equipped over 700 vocational and technical facilities, provided funding for 300 primary health clinics and hospitals, and supported over 2,000 water and sewer systems.

The result has been impressive. The rural counties of Appalachia have grown faster than their twins outside the region in income, employment, and population (Isserman and Rephann, Isserman). The differences are stunning: 17 percentage points faster employment growth on average during the period 1969-93, when rural employment grew 43 percent nationally (Chart 1). In contrast, the rural counties of another lagging region, the lower Mississippi Delta, where Congress continues to refuse to initiate a similar program, fell further and further behind their control group, 11 percentage points on average.

The Appalachian Regional Commission uses a grim set of requirements to define its distressed counties (ARC 1999, Section 7.5). Applying them nationally, 272 counties qualify as distressed based on data from the mid-1990s. Each has more than 150 percent of the national poverty and unemployment rates and less than two-thirds the national per capita market income (personal income minus transfer payments), or twice the poverty rate and at least one of the other two conditions.[9] Almost all the counties are in rural America, with only ten in formerly rural America and four in 1950 urban America (Bronx and Kings in New York City, and Laredo and El Paso in Texas). Ten percent of the people in rural America live in distressed counties compared to 3 percent in both formerly rural America and urban America (Table 7).

Two arguable implications can be drawn from the statistics in Table 6 and the Appalachian results. First, improving life and alleviating the distressed conditions in the 258 rural counties are well within

Figure 4
AMERICA'S MOST DISTRESSED COUNTIES



the wherewithal and capabilities of effective rural policy. Second, the metropolitanization of rural America appears to accomplish much of the task, although that is a testable hypothesis.

The distressed counties exhibit a marked regional pattern. They are found predominantly in central Appalachia, the lower Mississippi Delta and the associated Black Belt, the Mexican borderlands, and Indian country (Figure 4). These terms intentionally evoke the rainbow nature of rural distress. Yet, for whatever reason and with whatever excuse, only in Appalachia, where the distress is predominantly white, has this nation mustered a sustained and comprehensive rural development policy.

CONCLUSIONS AND POLICY IMPLICATIONS

Much of today's rural America will be the fastest growing part of the nation the next half century. The long-term prosperity and growth of this country, the spread of large cities and the creation of new ones, the addition of almost 30 million more senior citizens, and the accelerated diffusion of immigrants into rural areas are powerful forces contributing to the development of rural America. Rural areas are competitive in a broad and growing range of industries, which in time will include significant elements of today's urban-oriented new economy.

Some rural places continue to be left behind. We know what our policy response should be, and we know how to do successful regional development. Yet we lack the will and continue to let rural places languish unnecessarily with poverty and unemployment rates in the 30 to 50 percent range. I once recommended that the Appalachian Regional Commission become the American Regional Commission and focus on the problems of the nation's most distressed regions (Isserman). The governors of the 13 states in Appalachia were too smart to support such an initiative. Why should they, when it would only mean a sharing of resources and attention with other places and people, many worse off than their constituents? When recommending policy, we have to consider political feasibility, and we have to strive to understand why this nation has failed always to initiate and sustain urban policy, rural policy, or regional policy.

Our current statistical system makes it impossible for us to talk about rural America from a factual foundation, and even misleads us. We must decide what rural is and then measure it. The proposed new system of megapolitan, macropolitan, and micropolitan areas will not help (*Federal Register*, October 20, 1999, pp. 56,628-44). The world does not separate into urban and rural activities at county boundaries. With the geographical information systems and computer capacity of this age, we should be able to create statistics for urbanized areas and rural areas, at a minimum by separating our county statistics into those two components. We must stop being satisfied with a statistical system that leaves us guessing about conditions in rural America.

As more than a million metropolitan farmers demonstrate, urban and rural are intertwined. Key policy issues result from the interaction of urban and rural activities. Many farm families exist by combining farm and city incomes. The continuous metropolitanization of rural America is one dimension of that interaction. Yet metropolitanization does not mean the demise of rural activities. Rural policy must recognize their interaction and assure that growth happens on fair and wise terms conducive to both rural and urban people and activities.

ENDNOTES

[1] These numbers are my calculations. The county data on population and farms in 1940 and 1950 come from the *County and City Data Book, Consolidated File, County Data, 1944-77,* originally a Census Bureau computer tape now available from the Inter-university Consortium for Political and Social Research housed at the University of Michigan (www.icpsr.umich.edu). A list of metropolitan counties in 1950 can be found in U.S. Department of Commerce (1953), and the list of metropolitan counties in 1999 can be downloaded from the Census website, www.census.gov. I added together the data for the 274 metropolitan counties of 1950 and, separately, for the other 2,821 counties. Pitfalls in such work stem from changes in county boundaries, creation of new counties, modifications to the Federal Information Processing System (fips) codes, different practices among federal agencies, and suppressed data. The sum of the data for the two groups of counties, however, was between 99.9 and 100.2 percent of the sum of the data for the 48 states—the closest to national totals that I could derive for the six variables. Resolving those small discrepancies was beyond the resources, time, and needs of this paper. Alaska and Hawaii are not included because neither was a state in 1950.

[2] I derived these figures using the Census Bureau's estimates of 1999 county populations, as well as the methods, metropolitan definitions, and 1950 data described in the previous endnote. The 1999 data can be downloaded from www.census.gov. The 1950-99 calculations are based on 274 metropolitan and 2,812 other counties. Nine counties for which there were 1940 and 1950 data lacked 1999 data because of changes in county geography; four are in Virginia and two include parts of Yellowstone National Park. The counties used in the 1950-99 comparisons account for 99.9 percent of the 1950 and 99.6 percent of the 1999 populations of the continental United States. Alaska and Hawaii are again excluded.

[3] The employment data are from the *Regional Economic Information System* of the Bureau of Economic Analysis (U.S. Department of Commerce 1999b). The fips codes of the Bureau of Economic Analysis (BEA) differ from those of the Bureau of the Census, the treatment of independent cities in Virginia being the most important departure. I added the BEA fips codes to the metropolitan county file before making the calculations reported here. In all, there are 274 metropolitan, 557 formerly rural, and 2,244 rural counties for which 1969 and 1997 data exist. They account for 99.99 and 99.98 percent of 1969 and 1997 national employment, Alaska and Hawaii being again excluded.

[4] Here I utilized the Census population estimates mentioned in endnote 2 and the classification of counties created by the Economic Research Service, U.S. Department of Agriculture (and commonly referred to as the Beale code). The 1993 version of the code can be downloaded from www.ers.usda.gov. Beale code classifications and 1999 population estimates are both available for 836 metropolitan and 2,302 other counties. Their populations equal almost 100 percent of the national population (99.998%) including Alaska and Hawaii. Twelve counties have moved from rural to formerly rural since the code was released. Ten of them are included in the future metropolitan America of Figure 3. The two that are not underscore the fact that even places not adjacent to a metropolitan area and with fewer than 20,000 urban residents can become formerly rural, too.

[5] These calculations are based on employment data from the *Regional Economic Information System* (U.S. Department of Commerce 1999b). Farming includes both farm proprietors and farm employees. Alaska and Hawaii are excluded. More than 99.99 percent of the 1969 and 1997 farming employment in the continental United States is accounted for in the county data.

[6] These calculations entailed the same methods and data sources as the farming calculations. At least 99.98 percent of the 1969 and 1997 manufacturing employment in the continental United States is accounted for in the county data.

[7] I made the county employment estimates using *County Business Patterns* data (U.S. Department of Commerce 1999a) and a computer algorithm developed with Oleg Smirnov while we both were associated with the Regional Research Institute of West Virginia University. The method and alternative ones are described in Gerking et al. (2001). This particular method does not assure that the county estimates sum to the national employment by industry, but they were within 0.5 percent of national employment for every industry in Tables 3 and 4 except hotels and motels (99.1 percent), engineering and management services (98.8 percent), and mining (87.8 percent). The percentage shares for rural, formerly rural, and urban shown in the tables are based on the sum of the counties.

[8] I derived these numbers and all others in this section from Census Bureau estimates of county population, elderly population, migration, and immigration. The data are available at www.census.gov in the section for population estimates. Alaska and Hawaii are included. Note that net domestic migration sums to 674 in Table 5, not zero as it would by definition. The reason is that one, and only one, county in the United States is formerly metropolitan and, therefore, not included in most tables. It had –674 net migration for 1990-99. Fayette County, West Virginia, was part of the Charleston metropolitan area in 1950, but is rural today. Its population fell from 82,000 in 1950 to 47,000 in 1999.

[9] I identified the distressed counties using 1994 income and population, 1993 poverty, and the average of 1994, 1995, and 1996 unemployment rates. These data are the most recent available on *U.S. Counties 1998* (U.S. Department of Commerce 1999c). The Appalachian Regional Commission itself uses 1990 poverty data from the census instead of more recent survey estimates.

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Creating New Economic Opportunities: Discussion

Moderator: Larry Meeker

Mr. Meeker: Before we begin questions for the panel, we have an opportunity here as we have with the other speakers to ask a few questions of Andy.

Everett Dobrenksi, *CoBank:* I'm one of those metropolitan farmers that you're talking about from North Dakota. Could you tell me why I have to drive 50 miles to the nearest movie theater?

Mr. Isserman: Well, I was listening pretty carefully earlier today, and I heard that you're linked to a satellite already and you don't have to drive. It's not energy efficient and we don't have enough ethanol gas, so why in the world would you do that? Well, I'm sure the Research Station at Iowa State can send you some fine popcorn, that is if you don't mind genetically modified popcorn that pops faster and better.

Mr. Meeker: There's a question over here.

Bob Coppedge, *New Mexico State University:* You mentioned Michael Porter's work, and you've used the term "comparative advantage" throughout your presentation. What about the distinction he makes with "competitive advantage?"

Mr. Isserman: You know, I think that might be this two-o'clock-in-the-morning syndrome, and I'll be real careful when I edit things, but yes, I probably would have wanted to say "competitive advantage." Does anything that I said not ring true when I was going through those advantages in terms of competitive advantage?

Bob Coppedge: Right, but I saw them as "competitive" not "comparative" advantages that he talks about.

Mr. Isserman: Yes, I appreciate that.

Mr. Meeker: Other questions of Andy before we continue?

Julie Johnson, *South Dakota Rural Development Council:* There's been a trend line in some of the dialogue today about various federal definitions of "rural" getting us in trouble, one way or the other. Oftentimes, they're attached to a variety of federal programs, some of which fit in rural America and some of which don't. As we're building a new rural development policy, any advice about how federal programs that tend to be stovepipe in nature, tend to be one agency at a time kind of in nature, can fit together better to provide better service in our geographically sparse places?

Mr. Isserman: I thought I had an answer to the first part, then I got it with the geographically sparse places. What I was going to say, the important part when we're talking about a new Center, a new rural policy, is the rural policy for what areas and for whom, and what do we mean by "rural?" I was suggesting the nonmetro thing doesn't cut it. And where I was going to go with that is there are a lot of policy issues that are concerned with the interaction of urban and rural folks. Urban sprawl is one of them, land reuse issues. An urban planner friend who said that, "Gee, in all these years, I never really realized that that land belonged to people and was already in some other use and that it wasn't just a city spreading outward."

I think defining rural policy in that broad way and linking it up with urban folks is politically wise. It's a bigger constituency. That's why the Appalachian Regional Commission has succeeded 26 Senators. It doesn't hurt as a starting point.

Now in terms of the sparse places, that's the part that I don't know about. The writer Rachel Calof ended up moving to Seattle after 25 years in North Dakota. I guess it was an even longer drive to the popcorn. You're talking about this area in here, the Central Plains. You've already heard all of the insults that it ought to be a buffalo common, right, and that you ought to be encouraged to move away and let the buffalo roam, and that kind of stuff. I've been more concerned with problems in West Virginia and Appalachia that don't fit that, so I should probably shut up because I don't have anything good to say. I mean, I don't have anything real to say... I don't know enough about the situation there.

Mr. Meeker: Another question for Andy before we turn to the panel?

Beau Beaulieu, *Southern Rural Development Center:* You've made a really compelling argument about the distressed communities and really how the ARC model should be emulated in the Delta. I guess I want to get your reaction to either Clinton's New Markets Initiative. Or I understand the Republican leadership has just now introduced a bill, titled something like "The American Renewal Communities Act of 1999," which sounds to me pretty much like a new markets initiative. But obviously you don't want to embrace a new market if you're not a Democrat. The bottom line is, are those policies likely to be responsive to the kinds of issues that you're talking about in these distressed communities? Because really, it's nothing more than tax incentives for businesses to locate in these areas.

Mr. Isserman: I don't know. What I'm pretty sure of is that this Appalachian approach works, and it was a lot more than just tax incentives. It was an Appalachian share of federal money put to those purposes; whereas, other parts of the country took their share of federal monies in different things. Like, the Delta got lots of military base money and cotton support.

I'm of the impression that it needs a sustained concerted effort. It's been 35 years now in Appalachia. You know, you build these 2,000 miles of highway a mile at a time, a Congressional battle at a time. You fight against being closed down each time. And, when they set up these kind of commissions in other parts of the country, they didn't fund them as well, and they all died out. They weren't worth fighting for and protecting. So, I don't know. You know, I'm in a new job now, and I get to study those things to make my living, and I look forward to learning more about them.

There is sort of a feeling that there are really strong economic forces that are going to create lots of economic opportunities in many, many parts of rural America. That's how I read the record of the Fifties. I thought this was going to be a talk more about programs and business, training and support services, and venture capital, and the usual things that you expect when people talk about creating opportunity. You know, indigenous growth. I didn't realize that when I went back 50 years how strong these other forces appeared to be. It wasn't a spin-off of the University of Nevada that created Las Vegas, to put it that way. You need something to work with.

Seizing New Opportunities in Rural America: General Discussion

Moderator: Larry Meeker

Mr. Meeker: Let's now turn to our panel questions. We'll do as we did before, take two or three questions at a time and then let our panelists respond. Who would like to begin?

Marcie McLaughlin, *Minnesota Rural Partners:* I've heard mentioned three times an important issue that we're facing in our state, and I would venture to say that many states are facing. Something that we'll see in the year 2050 and was located in the white area on your map, and that is the assimilation of the new immigrant populations into rural America. So, I would lay that in front of you as something that we all need to be watching and be prepared for.

Mr. Meeker: Okay, another question.

Bryan Edwardson, *Cargill, Inc.:* I don't want this to be misinterpreted, because I work for an agricultural company. But given the title of the symposium, I'm just curious to sort of throw out a big picture question. And this stems from an observation that we have a Department of Housing and Urban Development and we have a Department of Agriculture, of which a small agency is the Department for Rural Investment. I'm just curious if it isn't so simple to think that perhaps we need a Department for Rural Development?

John Dean, *Glenwood State Bank:* We seem to be talking about rural areas, remote and nonremote. In remote areas, it seems we should have to look at either raising the profit to farmers that are staying there or bringing in other industry for employment. But when you get the nonremote areas, which are next to the cities—and I don't know what the solution is, maybe the panel does—but when you have a small town outside of Kansas City, maybe 15 or 20 miles, with an agricultural area between that and Kansas City, I think you'll find that the bulk of the people move out to that small community. They move there because they like the open spaces, they like the schools, they like the baseball fields, they like the soccer fields, they like the golf course, and all those things, but they won't support the area. They'll go to the dentist in Kansas City, they'll go to the doctor in Kansas City, they'll go to the lawyer in Kansas City, they'll bank in Kansas City. They almost live out there as cocoons. They come out there for rural life, but they don't support it. Now, there's a social problem that has to be addressed if those communities are going to stay the way they were when people moved out there. Does the panel have any thoughts or ideas on that?

Mr. Meeker: Okay, we have three really good questions. Let me sort of summarize them a moment and then let the panelists take their pick. One, assimilation of new immigrants—a big issue, and something I personally know about in my old hometown. Second, related to the title of the symposium, the notion that perhaps we need a "Department of Rural Development" in the U.S. government. Finally, this issue of remote versus nonremote communities. Remote communities perhaps needing other industry. Bedroom community implications for the nonremote with people who are not really willing to support those amenities that they're moving there for, going into town for banking, dentist, other kinds of services.

So, let me turn this over to the panel.

Mr. Jischke: First, the efforts at assimilation must be deliberate and systematic, anticipatory. The needs of these communities, at least in transition, have to be dealt with directly. I think there are examples in communities. I was commenting to somebody on the break about the success of a whole community of Bosnians that have come into a town in Iowa. They have become successful and the town's very proud of them. But, there were absolutely deliberate efforts with language and the transition. And second, to reinforce the comment that Professor Cornell made, it has to be undergirded by a pretty deep respect, and therefore, include an understanding of the traditions and cultures of these immigrants. It is a matter of respect, but it ultimately also has to do with preserving their integrity, their sense of themselves, and it has to be done respectfully. That is all possible, and it seems to me, as I tried to suggest in my prepared comments, that it's a pretty rich tradition in this country. We are, almost all of us, descendants of immigrants.

Mr. Meeker: Interesting observation, I think, about the cultural respect involved.

Mr. Cornell: I'd like to add just one thing to that. I actually took a cab in from the airport last night that was driven by a Curd from Iran who had been in this country for about five years. I asked him how it was, and he said, "For me it's terrible. I miss my homeland. For my four kids, it's wonderful."

I think we have to remember that generally assimilation has been a generational process, that the trick is to provide a set of services or ways to accommodate the migrant generation, but the critical thing for their children is the schools, and the systems that they enter into. The children typically have a very different experience. Assimilation very often happens whether you're trying to promote it or not when you get generational transmission. And it may seem like a problem in the first generation. But historically it's not a problem—not for all populations in this country—but at least for white populations in this country, the problem has tended to go away generationally.

Mr. Isserman: My reaction to the immigration question was to wonder whether we're talking about the difficulty of the adjustment by the immigrants or by the rural folks themselves. I think a big part of the latter is how the immigrants are perceived. If finally there's a doctor in the town clinic again and there hasn't been one since the last one died, I think the immigrant is most welcome and gets the benefit of the doubt.

I think we have a long-standing perception of immigrant workers as scabs. The movie *Matewan*, which took place in the coal-mining town of West Virginia, makes this really clear. If there's a perception that the companies are playing off the immigrant workers against the African-Americans and the mountain folks, it's a very different situation of adjustment that's being talked about. And I think probably in today's Minnesota setting, it might have something to do with meat packing, is that right? And meat packing raises lots of other passions and issues, and maybe we have to fear for the immigrants that are sometimes caught up in it because the industries are of mixed popularity depending on who has the contract or not, probably, in that area. And, in that sense, the immigrants are seen as a tool and it's a different kind of situation.

And all of this happened, because in 1965 we changed the immigration law to make it easier for Irish families to be reunified. And Representative Seller testified on the floor of the House that this change in law would have hardly any effect at all on immigration from Asia. So, we have a checkered past in dealing with this, but it's a tradition. Rachel Calof, the author with whom I began, came to the United States as a 16- or 17-year-old whose husband took her to the homestead, which was going to be theirs. They didn't get married until each of them filed separately so that each of them could get a double allotment. But there is an immigration heritage in this land that you were talking about. They found the Native Americans to be very helpful to them. I don't know if you can invoke their help where you are.

Mr. Meeker: Good comments. How about the topic of Department of Rural Development? We have Department of Housing and a Department of Agriculture. What about a Department of Rural Development?

Mr. Isserman: What's it going to do? That's the question, right? We have a secretarial level Department of Veteran Affairs. It hasn't made a difference. I don't know, is it political symbol or is there some real action that you expect? And if it is real action, and you can itemize the agenda, I think you're probably a lot closer to having an effective Department of Rural Development and effective policies. I think that goes in general for rural policy. If we can state what we're after, something bigger than our share or our share of the limelight, it stands a better chance and it deserves to exist.

Mr. Jischke: I think it would be very interesting to study from a diversity point of view. I think you have to be absolutely clear what the national interest is in such a department in order to give it a mission that is appropriate. But I am struck by Professor Cornell's observations that in building communities, local control and ownership, and local institutions are far more powerful. I mean we have a whole humor about this, "I'm here from the federal government and I'm here to help you" sort of jokes. I think you have to be absolutely certain why it should be done at a national level, what it would do, and then I'd still be a little skeptical about whether it would work.

Mr. Meeker: Turning to the third question on the list, I think the issue really focuses on rural areas near metropolitan areas, where there's not support, at least locally, for many of the things that are necessary in the community, the doctors, the rest of it. People want the amenities but really don't want to pay for them. What do you think?

Mr. Fox: It seems to me that people do that for a wide range of services. From healthcare, driving by the rural hospital to the movie theater to get popcorn that was talked about before. A lot of it has to do, of course, with sufficient demand to deliver the service in rural places. But, of course, some of it has to do with people who have patterns of life already in place, and they're used to a doctor or dentist in the city, and if they can access them nearby, they'll continue to do that. And, it will take a long time to change the pattern that they have in place.

But, I think we have to keep in mind that people don't think about the economy in terms of urban versus rural. It's a regional economy in which they consume. Just like they don't think of the economy as this county versus that county. These are artifacts, and from an economic perspective, they don't exist. What exists is a regional environment in which people consume services. Some they go further distances for than others. If they want a professional sports team and they're not at a university, they travel a farther distance. University of Illinois has it; University of Tennessee does not, just to go on record.

But, it differs on the service. I guess the point I'm making is that the region differs by the service that people are looking for. But, people don't think rural-urban. They think about meeting the needs and satisfactions that they have in mind.

Mr. Meeker: Let's turn to three more questions.

Steve Taylor, *New Hampshire Department of Agriculture:* Last week, the governor of Pennsylvania held a press conference and announced that in the first 100 days of 2000, the state of Pennsylvania had purchased development rights on 100 farms. In 1998, the New Jersey voters by referendum voted to bond up to $2 billion to purchase development rights on New Jersey agriculture land. Every state in New England has a purchase and development rights program to buy and protect farms. I was wondering if we in the Northeast are nutty in pursuing that kind of public policy, or is that a sound investment?

Bill McQuillan, *City National Bank, Greeley, Nebraska:* This issue really, in the end, is jobs. And I think some of us are leaning in that direction, to deliver information-based databases, whatever, to rural America. And my thought is, if we can, would it also make sense to deliver new jobs, whether they be federal and/or state and/or county for that matter, to rural America? I mean, we can access those databases from anywhere now. It just makes sense to me that we could save a lot of dollars by doing that, certainly, because people that typically live in these communities might work for a little less. And the people that have the jobs might transfer in and would probably be able to live cheaper. It's just a thought that might possibly work, and I'd like you to comment on that. Thanks.

Richard Lloyd, *The Countryside Agency:* We've heard a lot today about economic opportunities and community needs. I'm just wondering where does the environment work into all of this? A decade or so ago, we had the Rio Earth Summit, and the buzz phrase that we were all supposed to come away with was the concept of sustainable development, whereby you try and pursue economic goals and social goals side by side with environmental conservation and improvement, if possible. And on our side of the Atlantic, we're trying to pursue what we call integrated rural development where we try to pursue all three of those and create win-win-win situations. What I've heard a lot about today is very much the emphasis on the economic and the social, but the environment doesn't seem to fit in anywhere, which I think is rather worrying. Perhaps you can reassure me.

Mr. Meeker: Three questions. Two of them I think do have a link, the environment question here last and the development rights on the farms that are in New England, and that is a big effort in New England. The third question dealing with jobs and perhaps how we can deliver those to rural America. Let me turn this to our panelists.

Mr. Cornell: What are communities, what do they want to preserve, protect, change, see different? If we are serious about communities doing their own strategic thinking, then we have to be serious about deferring to their conception of what kind of future they're trying to build. The communities that I work with, many of them make very explicit decisions about what is the degree of environmental deterioration that we are willing to accept as the price of this particular strategy. And they make those same kinds of calculations about other things—what's the degree of indebtedness we're willing to take on, what's the degree of loss of political autonomy, or presence of noncommunity members, growth by bringing in outsiders. It seems to me that, if we're serious about local control, we must put those kinds of decisions in the hands of those who live in the community. And if they care about the environment, presumably they'll act in that fashion, and if they don't, well, that's what local control means. It makes sense.

Mr. Meeker: Maybe just as a follow-up with you, Steve, on the issue of development rights on farms in the Northeast. Do you have any idea if that's engaged in, perhaps by someone from the outside?

Mr. Cornell: Yes, I was going to say that I don't think that is happening just in the Northeast. We're certainly seeing that in Arizona, and I think in fact, all up and down the intermountain West—the move toward PDR is big and growing, as far as I can tell. I think the question you're raising is whether bringing in outsiders is an appropriate way to do it? But again, that's a question for the person who currently owns the development rights. They can sell it to anybody they want to.

If the state of Arizona decides to buy up development rights, that seems to me to be between the state and the current owner of those rights. I personally would like to see it happen because we're losing a great deal of grazing land in Arizona to subdivisions, and it's raising enormous water problems. But, whether or not it's an advisable policy or a recommended policy, I'm not convinced that I have a policy view on that. It's up to somebody else.

Mr. Meeker: Other responses to these or the jobs issues?

Mr. Jischke: First, quality of life, I think, for many people includes environmental issues, and I think it will be a competitive issue among locations, particularly for people who are in enterprises that are quite mobile. Second, as the level of income goes up, people are more interested in the environment and are prepared to spend more of their disposable income on improvements in the environment. And third, a major challenge for American agriculture is to try to think of ways of developing that are consistent with the environmental interests of others. And to think about doing that systematically and carefully.

Managing watersheds is an example in a way that's compatible both with agricultural needs and recreational needs. It's a big issue. It ebbs and flows politically in the Farm Belt, but it's not going to go away. I mean there are some basic conflicts there and they will have to be worked out. And there's the issue particularly of rural communities where agriculture is central and yet needs to be complemented by other economic activity in order to maintain a viable vibrant rural community. That must be resolved. My advice is look at it head on. Don't ignore the issue.

Mr. Fox: I'll touch on the question of jobs. Of course the point is right that information infrastructure particularly does open the opportunity for many jobs to be produced from anywhere. But of course, those jobs are likely to go where the people want to live. And so, the issue comes down not only to where does the business want to locate. I believe the roles of wages, for example, and where business will locate will both become increasingly smaller. What is going to matter more is where people want to be, and indeed where people are willing to accept lower wages to live in the right places. What's going to drive the firm decision is where it can find the kind of people that it wants. The problem on the information infrastructure side, though, as several people have mentioned, is that technology is likely to lag in rural places. And so to the extent that something high speed or broadband is required, which for the kinds of examples that were being used, is probably true, then rural places may not—at least many rural places—may not be as good of an option, at least not in the near term, until we get better strategies, better technologies in place.

Mr. Cornell: Just one other thing on the purchase of development rights. In parts of Montana where I've spent some time, one of the people who is working in this area says, "Well, the real problem up here is that most ranchers aren't even aware of the PDR option." They're concerned about losing their ranches and being forced out of their business by various factors, but they're unaware that there is a purchase and development rights option. And, I think part of the job here is to make these kinds of choices more available to people who currently don't know about them.

And, in some cases, we talk about purchase of development rights and a lot of work is being done on it, but the information about it never gets to the people who actually need to be making the choices. So I think that's one of the challenges. It's a very effective strategy for some of these people, but one that they may not even know is available.

Mr. Meeker: Okay, let's turn to another set of questions.

Jerry Nagel, *Northern Great Plains Rural Development Commission:* In the past couple of months I've found myself, three different times, hearing people under the age of 30 describing situations where their opinions weren't valued as they were trying to deal with policy. While I know everyone in this room is totally hip, if the demographic here is reflective of rural policymakers, are our rural policymakers really prepared to look at and examine and put in place policies that are sensitive to the issues that young people are concerned about in the places where they want to live?

Mr. Meeker: Good question. Another question?

David Darling, *Kansas State University:* I'd like to hear the panel comment about the role of extension in rural development—where they think it has come from and where they think it is going to—and if it's being deemphasized or reemphasized?

Mr. Meeker: And one more question.

Lance Woodbury, *Kennedy and Coe, LLC:* As I reflect on rural human capital and leadership and my travels around rural communities and even reservations, it strikes me that attracting human capital must be even preceded by people that are there now, deciding to do that. And, I'd like to hear the panel's response on policy, either implications or proposals, that get people working together.

Mr. Meeker: Okay, three good questions. One about the opinions of the young not being valued and policymakers being sensitive to this area. Second about the role of extension services in rural communities—should we do more or less of that? And finally this human capital issue: What about the folks in the community, how can they play an important role?

Mr. Isserman: I'll address the young people. You know, here comes a statement that I wouldn't like to have quoted, but they're just going to have to wait their turn. And, it is now the turn of the people who are in this room and are in the White House and so on. And, this links very much to development rights and environmental policy and environmental concerns. Those were the campus issues when we were less than 30 years old. Development rights are what were taught in school. Environmental economics was a whole new field—the concept of externalities and so on. And, when we did a history of economic thought, those of us that did, we read John Maynard Keynes who said that government officials used the outmoded theories that they studied when they were kids 30 years ago on campus.

So, that's why we're now doing the kid dreams that we had, which included development rights…and no, it's not a crazy idea. Now people who had to take exams on it can get to do it. And, hopefully, we're not that out of touch with what young people are looking for and what young people are interested in. The other part is that young people today, this 30 generation, they've got more money than that generation had a long time ago, too. And, they can buy some of their own things too when they cash in some of their stock options and get a chance to lead as younger people. I think those things will happen, and, I hope we're not that out of sync with young people, as least not those of us on campus.

In terms of the extension role and rural development, the thing that bothers me most is that extension is still trying to figure out its role in rural development. I'm on a committee for the University of Illinois' new what's-it-going-to-do in community and economic development. It's the most frustrating committee that I'm on and I can't figure out why we can't get this thing straight. The horror thought is that we can't get it straight because we're a non-answer. The other is that we need more centers like this to help us figure out what our mission is. But, then we always go back to: the people in rural America want more and vote for more rural development community development practitioners. Somehow, I hope we can put it together because I think that's happening throughout the country. And, if you've got some answers, any of you, let me know because our committee meets again next week.

Oh, and to get people working together...diversity does that real well and so does money. Why are there all these bike paths now? It's because we passed that transportation act—the intermodal efficiency, the old iced-tea thing. And so now you have lots of community groups working together to make bicycle paths all over the country. I think it's wonderful, but it takes one of two things—either money or terrible timing. If people aren't working together, they are either too poor or not poor enough.

Mr. Jischke: I can't remember a month where I've only had three people under 30 tell me that they don't feel people like me value them. It's a daily experience at the university.

A more serious response, I hope: I think that's a broadly held feeling among young people today. Second, it is very much related to the question earlier today about leadership. Young people today accept less than I remember in my career at the university, the idea that they are anointed leaders or masters. They are inherently more sharing—that is my sense. And, they want to participate. I don't think they necessarily believe they should make the decisions, but they believe they should be heard and participate.

And, I think that's a style of leadership that's going to emerge in more successful communities. It won't be decided by the four people who drive the biggest cars in town. It won't be a small group of men who happen to own businesses. It will be a broader leadership group—some from the private sector, some from the public sector, some from the not-for-profit sector. Some will be younger. It will be more inclusive, and part of the trick for success in the future is the capacity in the community to develop that kind of leadership. The young people think this way. That's how they see the world. They are much more comfortable with diversity, in a way that my generation and most of yours wouldn't have been. They're different. And, if you want to get into the new economy, these are the ones that are generating it, so you'd better figure out how to accommodate them, frankly, if you want the dot coms and so on. Those are the people that are doing it.

Mr. Cornell: I'm going to add one thing to Andy's diversity and money as a way to bring people together. I think there's a third thing, and this is based entirely on experience in Indian communities; but very often, there's a failure of the imagination about how different things could be. And success stories have a remarkable way of changing that. One of the most important things that has happened in the last ten years in Indian country is that the few successes that have occurred have been the subjects of extended conversation. People say, "If they can do it, why can't we?" or "If there, why not here?"

And, suddenly you find people getting engaged in the problem, people who before simply assumed, "Well, all I hear about is that we've got these insurmountable problems, so I guess that's what we've got and that's the way things will keep going." So, I think part of the challenge in generating economic development in rural America is to tell the success stories about the economic development that's been generated and communicating that and giving people a sense of what they can emulate. There's a lot of exemplary cases out there, and if we don't tell them, then people just stick with the restricted imagination that keeps them from getting engaged.

Mr. Meeker: Good responses. Let's take another set of questions.

D. Chongo Mundende, *Langston University:* Getting to hear the panel, I'm left with two questions: One, is rural policy or rural development as we know it a dying concept? And two, is rural vitality, as we have heard this afternoon and morning, a pipe dream or reality? Are we saying that the rural areas are hopeless or we cannot help them? What are we saying?

Kelly Haverkampf, *Wisconsin Rural Partners, Inc.:* My question relates kind of to Steve's comments or his presentation. A bunch of us were going to stand up and shout, "Amen!" to a lot of what he said about partnerships and providing technical assistance. If we are to develop a national rural policy, what role, or what percentage, I guess, would be in technical assistance? Right now, with the stovepiping that Marcie was talking about, we see a lot of schizophrenia in the federal government where HUD has a community builders program, while at the same time, the USDA is pulling everybody out of the communities and consolidating their offices. So, what role would that have in the development of a national rural policy?

Mr. Meeker: Let's take another question.

R. J. Baker, *Cherokee Economic Development Corp.:* I completely agree with the local control concept; however, in a lot of our state legislatures, we have a paradox in the legislation that's passed. While they're trying to help communities, they're cutting other budgets that take away from communities. So, my question is, has there been any study that would reveal the legislative barriers to local control? And, as a follow-up, to maybe model legislation that would help all of these ideas come to fruition?

Mr. Meeker: We've got three good questions here. Let me just summarize them a moment. One was really two parts: Is rural policy a dying concept and are rural areas hopeless? If we are to have a rural policy, what percent of that effort should be focused on technical assistance? And finally, has there been a study or anything that would indicate what barriers might exist at the state level to hinder local control?

Mr. Fox: I'll react first to the local control issue, the last of the questions. This is actually a worldwide problem. In Russia, for example, the biggest impediment to the development of cities and local governments is their regions or states. Because, there is this tendency for governments at every level to want to gain power and control. And, that's exactly what's happening in the regions. They actually control one of the Houses of Parliament, and nothing can pass through the Parliament because of the control of the governors of that House—nothing that can help local governments, that is. We do have a very serious challenge. I think in many states the local governments themselves are not very effective spokesmen in the state legislature. They're not effective at countering the state control. They're just simply different agents with different views. I'm, again, just sharing your concern. Given the fact that constitutionally the power is vested at the state level and not at the local level in the U.S., it's obviously a difficult challenge, and I don't know anywhere where it works very well.

Let me respond also to this issue about if there's hope for rural places. I think Andy said it very well. When we look back 30 or 40 years—50 in his example—we're going to find some rural places that did marvelously well. We probably won't be very good predictors today of knowing where the next Las Vegas is going to be, but there will be one. So, I think there's actually a great deal of hope. And the only thing we have to do is not screw it up. Because it will happen if we don't set policies that discourage it or prevent it from occurring.

Mr. Meeker: Other responses to those questions? There was one other question about in rural policy how much should be directed to technical assistance and those kinds of things?

Mr. Isserman: In the part of my life or paycheck that's not agricultural economics, it's urban and regional planning. And, I'm really struck by the difference in the two cultures, in that urban and regional planning has a 100-year or more history of being concerned with the kinds of things that we call "community development" and "rural development" and they have professional agencies, professional employees. We don't have any of that in the rural case, and yet we're coping with many of the same land-use issues, environmental issues, housing issues, and so on. And, I'm not sure how these different paths occurred, but it seems that the rural areas are the poorer for the lack of that expertise, and that's part of what extension is trying to do. And it's probably high time that there is this expertise on issues that are so important to rural life. Their urban counterparts have much more expertise, whether it deals with rural health issues, education issues, all the rest. It sort of just happened in rural areas maybe, and was indeed technically assisted for decades in urban areas.

Mr. Cornell: On this question of the amount of technical assistance, I don't have any idea of how much. But, it strikes me that there's a crucial corollary question: What kind of technical assistance is it, and who is deciding that? A great deal of assistance is pitched toward problems as conceived by decision makers who are far removed from the problems. If in fact you had technical assistance that was really a resource to local control rather than a de facto shaping of local decision making, that would help. I think often we make decisions because there's technical assistance available if we go this way, but not if we go this way. What we want is technical assistance available regardless of which way we go. And, then, it's our information that's shaping the use of technical assistance, rather than technical assistance shaping our decisions. I think that's really the crucial question. Once you're at local control, then you ought to invest substantially in technical assistance.

Mr. Meeker: Well, it's time to wrap up. I would like to thank Martin, Bill, Steve, and Andy for their wonderful participation in this panel. To me, it's been a very exciting discussion, and I do believe there are many new opportunities for rural America. And, they're tied not only to the resources we have there, the infrastructure, the human capital, leadership, and institutions, but to a lot of what is happening today in the rest of the world, and with technology in particular. If there's one theme that strikes me as running through all of this, it's the theme of adaptability. And, Charles Darwin had something important to say about that when he said, "It's not the strongest species that survives, or even the most intelligent, but rather, the most adaptable."

I think perhaps that is an important theme this afternoon. Thank you all for your participation. You've contributed greatly and we appreciate it much.

Rural Policy Lessons From OECD Countries

Mario Pezzini

The aim of this paper is to review briefly the main trends affecting rural areas across the OECD and identify some of the key policy (re)orientations that are emerging as a result.

The shift in the nature, content, and administration of rural policies in many OECD countries during the 1980s and 1990s has been noted in numerous reports and studies, including those of the OECD. The changes observed concern both 1) shifts in the policy focus and 2) adjustments to the governance structure, in particular:

- A shift from an approach based on subsidizing declining sectors to one based on strategic investments to develop new activities.
- More attention to quasi-public goods and "framework conditions" which support enterprise indirectly.
- A focus on local specificities as a means of generating new competitive advantages, such as amenities of an environmental or cultural nature or traditional or labeled local products.
- A shift from a sectoral to a territorial policy approach, including attempts to improve coordination and to integrate the various sectoral policies at regional and local levels.
- Decentralization of policy administration and, within limits, policy design to those levels.
- Increased use of partnerships between public, private, and voluntary sectors in the development and implementation of local and regional policies.

Even though in many countries, sectoral policies, centralized sectoral administration of them, and subsidies to maintain existing activities remain very important, there seems to be a consensus that rural policy is evolving. In this paper, we will look at the main assumptions underlying this evolution and then the specifics of the policies themselves in different OECD countries.

RETHINKING THE KEY ISSUES

The shared challenges facing rural regions

Rural areas, in general, still face particular challenges in comparison to metropolitan and even intermediate areas. Three specific concerns are often identified.

First, even if farming is still important in shaping rural land use, employment opportunities in primary industries (largely agriculture) are declining. Moreover, in many rural areas, public sector employment has been the main component of employment growth, but in a climate of fiscal restraint this source of jobs is likely to contract.

Second, outmigration of young people caused by both lack of employment opportunities and inadequate access to educational and leisure facilities, along with inmigration of retirees in some places, has led to significant aging of the population. The resulting demographic structure is often not sufficient to support provision of adequate public services.

Finally, most rural areas have difficulty establishing the necessary critical mass of facilities, producer services, and investments to support economic development so that entrepreneurs have difficulty starting up enterprises in the area.

Yet, despite important economic and demographic challenges, sustained development has been observed in certain rural areas. As a result, policymakers are increasingly coming to recognize that economic prosperity is not restricted to metropolitan areas and that many rural areas can "fend for themselves" in the global marketplace in a wide variety of different ways – in other words, rural areas are no longer synonymous with decline. The reasons are the following:

- Urban manufacturing and service industries started to relocate to suburban and rural greenfield sites where land was more plentiful and cheaper. The availability of more diverse employment opportunities in some nonurban areas also served to increase population movements from urban to rural areas.
- Sustained endogenous development has also been observed. This has involved both intermediate and remote regions, with sources of economic success including dynamic SME clusters and industrial districts, development of diversified agro-industries, and rural tourism. In these areas, growth in local industries has reversed patterns of economic decline and outmigration.
- Residential location decisions place increasing emphasis on quality of life factors, including proximity to open countryside and natural amenities. This has resulted in people moving from cities to rural areas attracted by a pollution-free, easily accessible, natural environment.
- Demand on the part of urban dwellers for amenities in rural areas has increased because improved transport links make recreation in rural areas feasible.

On the contrary, the role of commodity agriculture in rural development has weakened. Of course, some rural places still owe their growth to new ways in which agriculture produces commodities. In some regions, farmers still derive income and even employment development by signing contracts with a major food company to deliver precisely grown products on a preset schedule. However, such a successful move to a "supply chain" organization changes not only how agriculture does business but also who does business and where. In most cases, supply chains include relatively few farm producers (so to minimize the costs of managing highly integrated business alliances) and lead to a geography based on concentration in relatively few rural places. With few farmers and fewer suppliers where they are located, the economic impact will be different than with commodity agriculture of the past.

Pushing things a little further, one is tempted to state that today ***rural is not synonymous with agriculture***, and even that agriculture is no more the backbone of rural areas. In any case, data collected from member countries make clear how dysfunctional a single sectoral definition of rural areas is. Even among the most rural regions of OECD member countries, only one out of five jobs is in the agricultural sector (including forestry and fisheries), and employment shares of the industrial sector (including mining and construction) are higher than those of agriculture. Moreover, almost everywhere, agricultural employment is declining not only in relative but also in absolute terms.[1]

Yet, agriculture plays an important role in shaping the rural landscape, and it remains a wellspring of national support for development. However, this seems to make sense if agriculture is conceived more as a part of a restructuring process toward multisectoral approaches (which encompass agriculture as one component of a comprehensive rural development policy) than as a traditional sector producing commodities.

A crucial implication is that while for a long period of time agricultural policies have been considered as rural policies, an approach extended far beyond agriculture is today required to cure rural ills. The interests of the majority of rural citizens, and even most farm families, are no longer (if they ever were) best served by sectoral policies, since they increasingly depend on employment and income generated by a complex mix of interacting economic activities. This is why a shift from an approach based on subsidizing sectors to one based on strategic investments to develop new activities is more and more expected.

The rationale for a "rural policy"

The rationale for a territorial approach to rural policy is the result of the fact that the shift in the economic base of rural areas away from agriculture should be accompanied by policy intervention. Many but not all rural areas still suffer from relatively low incomes, high unemployment and underemployment, poor quality of employment, outward migration of young people, and low-quality services. This may raise concerns of equity and cohesion (for example, within the EU rural policies are essential for the achievement of cohesion objectives in Objective 1 countries like Greece and Portugal). Although subnational differences are not a new phenomenon, they may become a growing political concern for at least two reasons.

First of all, sound macroeconomic policies (ensuring national growth together with stable prices and healthy government finances), as well as structural policies (improving the efficiency of markets) will not be sufficient to deal with new and more intense rural problems. Indeed, globalization is putting beyond the reach of national governments more and more of the economic, social, institutional, and legal parameters that were once under their control. National barriers to competition and all sorts of regulation are being progressively dismantled and removed. Exchange and interest rates are less and less susceptible to manipulation by administrations. Thus, by loosening national ties and enforcing international competition, globalization confronts rural areas both with development opportunities and with threats not previously encountered. On balance, globalization is expected to bring gains to economies in their totality, but it will nonetheless pose severe problems of adjustment to a good number of rural regions.

Secondly, traditional territorial policies, concerned with the equitable geographical distribution of resources, are not going to be an appropriate answer to the new conditions engendered by globalization. Assistance is not only difficult for cost reasons, there are also doubts about its efficacy. As a result, mobilizing local resources and local collective goods to support comparative advantages for local firms, local entrepreneurship, and innovation, as well as to assure social cohesion (by, for example, facilitating "welfare to work" policies to integrate the unemployed and excluded) could be more promising development strategies. In short, there is a widely held view that a change in emphasis from fiscal policies to endogenous development strategies can add impetus to the restructuring of national economies by reinforcing the capacity for self-generated change.

Together with divergent growth patterns and endogenous development, a key change in thinking about rural policy has resulted from the emergence of a more general policy concern with sustainable development. This marks a shift in thinking from the idea of development as a process mainly or entirely linked with economic growth to one based on increases in quality of life. In fact, some rural areas contribute to the quality of life of society as a whole because they contain important public or quasi-public goods such as a clean environment, attractive landscapes, and cultural heritage. This wide range of amenities can be a source of economic development, (in many cases the only potential factor of comparative advantage relative to other locations), either through the direct exploitation of resources or through creating conditions likely to favor economic activities. Potential economic opportunities range from developing green tourism packages (farm holidays, nature holidays, theme routes, and discovering of natural heritage), promoting local products (traditional farm foods, goods requiring high-quality water, or other locally produced materials; and craft work using specific raw materials, skills, or heritage) to attract residents and enterprises to the area.

Last but not least, a series of recent events has put rural policies on the international agenda, including that of the OECD.

Rural policies in the international arena

The international policy context lies, firstly, in the increased demand for certain noncommodity outputs of agriculture, and in some cases, a diminishing supply of these amenities, resulting from demographic changes, lack of economic growth in many rural areas, changing farming practices, and the declining importance of agriculture in the economy. Governments have become more concerned about ensuring that the noncommodity outputs of agriculture correspond in quantity, composition, and quality to those demanded by society. In some cases they are looking for appropriate policies to help regions valorize their natural and cultural endowment so to attract more tourists, make them pay for the reproduction of beautiful landscapes, and support farmers to do so. More complicated is the case of pure public goods for which a market is difficult to create or where a market may compromise the interests of future generations.

Growing interest in the multifunctional character of agriculture coincides with the opening of WTO Millennium Round negotiations to make further reductions in trade distorting tariffs and subsidies. Some member countries are concerned that reductions in production-linked support and trade liberalization may, by reducing production of certain crops in certain areas, reduce some of the positive noncommodity outputs of agriculture below the levels desired by society. The response of these countries is to provide additional support to ensure that the amenities are maintained. Conversely, there are fears on the part of trading partners that those countries want to protect commodity outputs from international competition by introducing additional supports for the noncommodity outputs of their farmers.

Against this background, rural development policies—the approaches and instruments used to promote economic development and employment growth in rural areas—can become entwined with broader issues.

An initial contribution to this debate from the rural development side is the following: If rural is not in itself synonymous with decline nor with agriculture, if productivity gains in agriculture tend to reduce the sector's capacity to create jobs, then viable rural communities may better be assured by comprehensive area-targeted programs than by traditional agricultural production-linked payments. Such a suggestion does not erase any need for measures related with agricultural production. On the contrary, in regions where, for example, aging populations and geographic conditions will restrict the speed of conversion to nonagricultural jobs, block grants for area-targeted programs will result in monetary support to farmers if there are no clear alternatives. However, such programs in remote, declining rural regions are minimally trade distorting because these regions participate only marginally in the global economy. The same cannot be said for agricultural policies linked to production which raise output in more productive rural regions and which tend to support the most efficient farmers. Adopting a territorial approach allows this important distinction to be made, thereby increasing the chance of reaching compromise in international negotiation in this field.

The extent to which input from the rural development debate will appear in the agenda of international trade negotiations is difficult to say. An increasing number of practitioners and policymakers see in them a useful tool for possible agreements.

New issues in rural policymaking

Together with a new impetus for a territorial approach to rural policy, specific new issues are increasingly shaping policy design and implementation.

The first issue has to do with the fact that past public policies have tended to focus on rural areas as a block—treating them as homogenous with uniform problems and opportunities and usually contrasted with those of urban areas. Such an approach no longer reflects the present development opportunities for rural areas. The unit of analysis and intervention has changed. In many cases, the definitions of separate urban-rural forms, functions and societies have become obsolete. Daily commuters from sparsely populated municipalities in suburban areas of London or Paris have values and behaviors that are much closer to those of city residents than the values and behaviors of (traditional) rural dwellers. In this context, the crucial unit of analysis and intervention is not the small municipality but rather the functional region, defined in terms of its local labor market or commuting area. Rural and urban cannot anymore be easy substitutes for sectoral *weltanshaung* and interests.

Furthermore, the traditional approach does not take into account the actual diversity among rural areas. The business environments of the French Auvergne, Tuscany in Italy, the Spanish region of Andalucia and Portuguese Alentejo, for example, are fundamentally different. All of them are rural areas — with low population density and significant agricultural land use — but their development patterns are significantly different.

Why do regions have such a distinct performance profile? What are the structural differences between regions and which contribute to explaining the different performances? Which typology of regions should be taken into account in policymaking? Regions have certain basic resources and characteristics that shape to a large extent their development trajectory and potential — geographical location, proximity to markets, topography and climate, natural resource endowments, industrial heritage, endowment of human, social, and physical capital. The point of departure for policymakers should be the identification of possible development strategies per type of region. General measures applied uniformly across *all* regions are often ineffective and even inappropriate at a time when territorial diversity is increasing. Areas with abundant service networks, a skilled workforce and physical and intangible infrastructure can take advantage of their externalities to strengthen their comparative advantages and expand their market power. But other territories in which agglomeration effects are smaller have difficulty in achieving the necessary critical mass that would allow for competitive and coherent production, even in specific market niches, and may be threatened by depopulation and decline. Moreover, although a large stock of technologies is available, access costs and the ability to make optimum use of these technologies vary considerably across territories, depending on their sectoral mix, business cultures, technological infrastructure, and skill levels. Even the new information technologies that obviously make the factor of distance less important do not necessarily lead to more uniform spatial patterns. For these technologies, like others, specific territorial strategies are necessary, given the local differences in absorption, the differing SME fabrics and the significant technological gaps that continue to exist across regions.

The need to develop tailor-made regional policies has been implicitly recognized by central governments. At the same time, experts are aware that it would be unrealistic for central governments to tailor policies to *each* region given the complexity of implementing procedures and the prohibitive coordination costs. A middle course may take into account region types that should be targeted by specific policies. Many governments have identified maps of eligible areas using appropriate criteria. These criteria vary considerably. They may be geographical in nature (for example, the fact that the areas are located in remote mountain regions as in Switzerland,[2] or outlying regions as in Sweden[3] and Finland) or socioeconomic criteria (in terms of poverty in Mexico[4] or labor market characteristics in Germany). These maps are generally revised periodically to take account of economic trends and the fact that some territories are catching up while others are falling behind. In the EU, the structural funds granted by the Commission supplement the member countries' initiatives and add a European map to national maps. Since the 1989 reform, this map negotiated with member countries has been based on a more detailed assessment of regional problems, and four types of regions—today reduced to two—have been identified.[5] For each of these types, the Community has defined policy objectives to be implemented under the structural funds.[6] In the EU again, the development of border areas is strongly suggested, influenced by the need to establish and/or consolidate ties and joint initiatives with the area located on the other side of the border. Policymakers should take into account the specific influence of these interregional networks to base targeted policy.

The change in the unit of analysis and intervention is, of course, closely related with efforts to replace large-scale subsidy programs with a more selective approach using packages of coordinated measures focused on the development of the economic fabric of lagging rural regions. These forms of aid tend to supply collective services either to improve the quality of the business environment or build social and human resource capital, thereby indirectly helping local enterprise. In many countries, it is assumed that endogenous development capacities and entrepreneurship are latent in rural areas and that specific measures to encourage them are needed in order to bring out local dynamics of business creation and development. Thus, the new course of action has led to more attention to quasi-public goods and "framework" conditions, which support enterprise indirectly.

The second issue that is increasingly shaping rural policy design and implementation is common to a large range of policies and has to do with the fact that local and regional governments have been brought more strongly into the picture. The diversity among rural places makes it very difficult to design a national rural development policy which can take into account locally specific needs at the same time as geographically balanced objectives of national economic development. Traditional concerns related to fiscal federalism, the effort to secure effective citizen participation in decision making, as well as the necessary consensus to design and implement policy implies an active role for different levels of governments (local, regional, national, and international). Many countries have thus embarked upon reviews and reforms moving in the direction of decentralization and devolution of economic and social decision making and program management.

Depending on the chosen degree of decentralization, governmental entities at the lowest levels are increasingly being invested with new mandates and are having to cope with a multiplicity of issues spanning a variety of geographical areas (for example, environmental problems involve ecosystems and unemployment affects employment areas). Increasingly, these different areas cut across separate administrative entities. To adapt to such a scenario of shared authority, territorial dynamics, and new economic realities, central administrations have begun to prompt the formation of new structures for territorial governance by encouraging and setting forms of vertical and/or horizontal coordination between the institutional parties involved.

The development of rural areas is based more and more on interactions with adjacent areas. The interregional aspect is not always taken into account at the international level because these cross-border zones do not coincide with traditional administrative divisions. Differing regional fiscal and regulatory regimes and diverging levels and rates of development are equally obstacles to intensification of spatial relationship between neighboring areas. Cooperation between communities and the putting in place of horizontal partnerships between public and private actors over areas sufficiently large to define coherent, common strategies have been seen as the most effective means by which to take into account these new forms of territorial development. These flexible forms of governance permit governments to exploit better local complementarities and, notably, to ensure continuity in infrastructural development through the sharing of public investments.

In practice, a wide variety of institutional arrangements for the delivery of rural policy has been noted in OECD countries, but some common features are:

- Decentralization toward regions and localities, sometimes involving efforts at community "empowerment," in order to better meet diverse needs and conditions found in rural areas and tap local knowledge and other resources.

- Support for "bottom-up" development initiatives, for example, through the Canadian Community Futures Programme and the EU LEADER program.

- Attempts at better coordination of policies affecting rural areas at central levels through interdepartmental and interministerial working groups or committees, sometimes paralleled by rural affairs committees in national parliaments, and possibly involving various forms of "policy proofing" to ensure that all policies consider the rural dimension (policy proofing is the process by which a designated body "proof-reads" legislation to verify that rural issues have been adequately considered).

- Greater coordination and cooperation at regional and local levels usually through partnerships involving the different public departments and agencies as well as private and voluntary sector interests.

An important trend has been the apparently growing power of the supranational level on the one hand, and the regional level on the other, as compared with the national level. This is not just a matter of changes in the distribution of administrative functions between levels, but also political and institutional changes, such as the extension of EU powers, the creation of a Committee of Regions at EU level, Scottish devolution, and the creation of regional governance structures where none existed before in several OECD countries. Moreover, there are new institutional structures of local development emerging in some countries which cut across traditional administrative, geographical, and sectoral boundaries, examples being the Regional Nature Parks in France, LEADER local action groups, and Local Agenda 21 activities.

It is widely argued that development policy and practice must allow for diversity in the goals and objectives of development; must acknowledge that it should include social, cultural, environmental as well as economic dimensions; and should allow for democratic processes at all levels. The idea of local and regional partnerships is often a step forward, and the idea of including social and environmental groups (NGOs) in such partnerships within the EU is another sign of progress, but more needs to be said in the future about democratic processes and participation of rural people. In some cases, partnerships have lacked open and transparent procedures and accountability to local populations. In other cases, partnerships have proliferated along sectoral lines, leading to multiple partnerships in any one locality or region which frustrate or hamper the goals of "integration," and often lead to "partnership fatigue." Some relevant questions for policy development are:

- How can partnerships be made more open, accountable, and democratic?

- How can the participation of citizens in public decision making be improved, especially in very sparsely populated areas with scattered settlement patterns?

- Should partnerships be reorganized on a territorial basis to serve the needs of planning for integrated rural development at local and regional levels and avoid proliferation of sectoral partnerships?

- Should partnerships be mainly a means of joint strategic planning, monitoring, and assessment; or should they be decision-making or implementing bodies as well?

It may be that there should be a stronger role for democratically elected local authorities in local and regional partnerships, and that a single local or regional partnership should deal with all social, economic, and environmental aspects of territorial strategic planning for development. It may also be that in some sparsely populated areas, levels of local government are too remote to permit easy access to services and decision-making processes by rural citizens. Central government financial support, negotiated on the basis of the territorial plan, could take the form of a global grant and rather than being subject to complex *ex ante* administrative rules and conditions, financial control could be in terms of *ex post* outputs and outcomes or results.

At the level of central government, there often remains room for improvement in coordination of the various ministries and departments responsible for policies affecting rural development. Judging by recent developments some key elements seem to be:

- Policy "proofing" by a senior interdepartmental or interministerial group. This group sees policies affecting rural areas during their formative stages, is able to point out possible problems for rural areas, and can propose amendments. For example, the group may look at policies for housing, transport, telecommunications, water and waste disposal, postal services, education and training, health, regional development, agriculture and environment, national parks, local government, and so on.

- This process is likely to be stimulated by the presence of a rural affairs committee in the parliament, with a territorial rather than a sectoral remit, since this will ensure senior civil servant participation in any interdepartmental or interministerial group.

- Allocation of rural coordination responsibilities to one senior ministry or department which must chair the interdepartmental or interministerial group.

This partly refers to the continuing role for central government in terms of macroeconomic management, which will have rural implications, but it goes beyond that.

Another role for the state is in ensuring that there is a good flow of information about rural development activities and their results. In many cases this is undertaken through national or supranational networks of local partnerships (as, for example, in the European LEADER Observatory) which exchange information, run training seminars, and provide documentation on "good practice," etc. Such activities need to be supported by active research, which can codify and validate results, and raise issues to be addressed.

CONCLUSIONS

Rural policy has seen significant developments in the past two decades. Several member countries have completely overhauled their rural policies in recent years, while most have undertaken significant reforms. The key elements of these shifts have been:

Relating to the governance framework of policy…

- Efforts to improve central coordination of a wide range of policies affecting rural citizens through institutional arrangements for interdepartmental and interministerial coordination, including "policy proofing" to ensure that all such policies contribute to the overarching goals, and that actual or potential conflicts are minimized.
- Attempts to create more flexible arrangements for central support of rural development such that the diverse and varying needs and circumstances of rural areas can be better met, for example, through policy "menus," devolved powers to prioritize measures and spending, and "global" program grants.
- Efforts to create new institutional arrangements at local and regional levels to define policy objectives priorities and strategies, and implement policies and programs at these levels, as well as to involve both government and nongovernment actors in ways which not only integrate and coordinate activities but also draw on local and regional knowledge and other resources and increase the participation of local people.
- Efforts to build local capacities to act through leadership and community development programs and empowerment of local actors — i.e., a better matching of responsibilities and powers.

Relating to the objectives and instruments of policy…

- A new focus on trying to improve the "competitiveness" of rural areas, and hence to understand the key elements which differentiate rural areas which appear to be "performing" well from those which are not.
- Attempts to divert resources from programs which focused on subsidies to existing rural activities in an effort to maintain these, to programs which focus on support for investment in human and social capital, diversification of economic activity, and the related creation of new enterprises, key infrastructure, the environment, and innovation.
- Efforts to reinforce rural economies, principally through diversification of economic activities, mainly using indirect aid for transport, communications, and business infrastructure; promoting networks of

knowledge and expertise; supporting education and training; and increasing the attractiveness of areas for new enterprises.

- Enhancing business assistance, especially efforts to diffuse new technologies through R&D and the development of specialized regional institutes or centers, enhancing business services, establishing interregional and international business networks, and encouraging endogenous innovative initiatives.

- Developing human resources through vocational training, including an important emphasis on entrepreneurial skills, and school-to-work initiatives; plus capacity building for policy actors at local levels.

- Developing and commercializing natural and cultural "amenities" through direct exploitation of the relevant resources for recreation, tourism etc., and indirectly through promotion of conditions likely to favor, for example, enterprise locations for quality of life reasons.

- Creation of local products based on local identity and aiming at a market niche, usually linked to local natural and cultural "capital," and including development of quality labels and guarantees linking products to places, particular production techniques, etc.

- New ways of providing public services in rural areas, sometimes combined in service centers and, as in the case of telemedicine and distance learning, sometimes using information and communications technologies.

- The increasing use of program evaluation procedures both as a control and a learning mechanism.

In many cases, these refinements and innovations are recent and limited in scope to certain OECD countries. As such, they have not been comprehensively evaluated. Additional work will be needed to ascertain the durability and transferability of these initiatives on a wider international scale. Nevertheless, this brief survey lends support to the argument that rural policy has now gone beyond agricultural policy in many countries, both providing a complement to sectoral policy approaches and offering new trajectories of development for rural areas.

ENDNOTES

[1] Economic forces and changing government policies are speeding up the process of agricultural restructuring in most OECD countries. In effect, most regions have become less dependent on agriculture and resource industries and specialization in these sectors is risky given the vagaries of international commodity markets and trading regimes. Estimates of the amount of formerly agricultural land that will be converted to other uses range between 30 percent and 80 percent (ESDP, p.20). The issue for policymakers is how to ensure that market-led restructuring does not result in overcultivation with negative environmental effects in some areas and abandonment of the land in others. Adjustment and transition to new economic sectors and activities is therefore a priority, and the majority of member countries opt for policies of internal and, especially, external diversification.

[2] Fifty-four micro-regions have been defined as qualifying for the LIM (Law on investment in mountain regions).

[3] The northern areas are defined using a criterion of population density. They are eligible for settlement grants and subsidies for transport and job creation.

[4] A marginalization index, calculated based on nine indicators taking into account the proportion of the population that does not have access to basic goods and services, is used to identify 91 priority regions for federal government aid.

[5] For the 1994-99 period.

[6] Although these typologies are largely based on objective criteria, they may be applied with some flexibility, in particular for territories that are borderline cases. Some areas may be included in a type of region as a result of complex negotiations in which countries, regions, and even a supranational entity (the EU) are involved. Consequently, these areas are defined to some extent partly through a political compromise. In the case of type 5b areas, since the European negotiators were unable to reach a clear definition of criteria of eligibility, the map was particularly complex and geographical priorities were not easy to identify. In general, switching a region from one classification to another raises practical problems, which can result in exemptions being granted and transitional periods being established.

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Rural Policy Lessons from OECD Countries: Discussion

Moderator: Mark Drabenstott

Mr. Drabenstott: We'll take time for just a couple of questions for Mario before we move to our next presenter. As we did yesterday, we'll bring the microphones to you. And again, please introduce yourself and your affiliation before you state your question.

R. J. Baker, *Cherokee Economic Development Corporation:* What is the definition of "functional region?"

Mr. Pezzini: You can define a "functional region" as a Reich in geographical terms because people have blue eyes in a given area, and so on. But, due to the fact that we are dealing with development, functional regions are regions in which people do share economic relationships. At the end of the story, a local labor market is the best example of a functional region. The reason why it is so important in this discussion, is that many countries, including this one—counties, states—were defined two centuries ago. And, this administrative border does not correspond anymore with the need of economic development.

What are these needs? Often, the size of administrative boundaries are not important anymore, while the size of the state is too big. Consequently, it is required to have a different critical mass. How to grow from the present situation to the future one is a big deal. Think, for example, of the United States—all the problems between inner cities and suburban areas. It is obvious that a reasonable reform should put together these two areas, including taxpayers in the same area because they are using the same space and they should pay the same amount of money. But, this is politically impossible today.

So, the real problem in political terms is how you can get as close as possible to that result, and get an administrative border that coincides with real facts. And the solution? There are multiple solutions. In Italy, for example, the central government said that all municipalities that want to go together can do that. The final strategy put on the table trader cessation, unions, local authorities, and then either state will come with money. And, if I like the strategy and if we find an agreement, everybody will bring something to the table, and we can start our development project. This can be a solution.

In other countries, for example, in France, it is more centralized. In France, there are discussions on how to define a municipality and so on. So what I think is very interesting today is to study these different experiences. To increase the critical mass that is required today to do the infrastructure that permits you to be competitive in a global arena. And then, share what is best in the different experiences.

Hubert "Buck" Humphrey, *Agribank, FCB:* I was intrigued by your comments as far as regional and kind of more broad-based partnership thinking as opposed to direct support. My simple question is, are you alone in this thinking or are other of your peer brethren coming along, and are we going to see some progress kind of away from a common European policy?

Mr. Pezzini: I don't think that in history—I am living in France, but in that respect, I'm not that French—I don't think there is only one way. I'm very feminist in this perspective. I don't think there is one way to do things. I'm not for that. There is no one best way of producing cars. I think that there are many, and the diversity is a value. Now, in this respect, I don't know if there will be just one trend of evolution or counterfact. Among other things, political rights were not assured once in history. People have to fight to maintain political rights. Now, what I am seeing is that there are very centralized countries like England, Sweden, Japan, Korea, which have decided to create regions. England has given autonomy to Scotland and created ten regional agencies for development that could be the beginning of a region that will have autonomy. Sweden has created a first region in western Sweden. Korea in 1995 created local authority. But, this is happening not only in centralized countries. Italy is now discussing whether to become a federal state or not. Spain is redefining the territorial organization of the country. Portugal had a referendum to decide to create regions two years ago. Then, people decided not to create regions, of course. Things can go in different directions. In Japan, there is a big fight between different ministers to decide who should be in charge of regional development. These are just examples. China is extremely concerned by the fact that there is a big development on the coastal areas and the rural areas are starving. So, they would like to have regional development in order to balance a little bit of the development. These are just examples. What will be the final direction, I don't know. But here, we are the vector—a clear issue on the table.

Mary Thompson, *Farm Journal Magazine:* Could you please define the components that you think are part of successful rural development? In other words, just give us a definition of what you would consider successful rural development and how that definition or components might change from one region or country to another?

Mr. Pezzini: Of course, that is a very tricky question. It is almost six or seven years that we have been trying to work on it with ERS. We started creating a database, a list to compare rural areas of true countries. We created 72,000 microunits of analysis that were classes of municipalities. And then, we reaggregated them in 2,200 regions, classified with a density of population. And then, we started questioning this database, this grid with indicators like employment, unemployment, income, and so on. And, we are continuing to do this job. The first result was that there were rural regions with growing employment and declining employment. This was for us a first proxy of what I call "dynamic rural region." Then we tested this proxy on the base of increase in income. And, the results were more or less the same, so employment was a good proxy also of income development. We are continuing now analyzing indicators of amenities—how much an area is rich in national and cultural resources.

But at the end of the story, I think that this thing tends to converge. A dynamic rural area is one that is able to create employment. I, myself, am unable to give a final answer to this question. We are working on statistical data, but because there is a time for everything, and the time for statistics is much slower than the time for decision and policy making, I decided to take a shortcut. So we called the 29 member countries of OECD, which by the way are not only European. Canada, Mexico, Japan, New Zealand, Australia, Korea are also members of OECD. We called the directors of general ministries and we asked them, with the list of regions that are rural and successful in their countries, how success can be explained? And as I said, we got five answers. Here, I represented four of them, because the fifth was never that agriculture was responsible for the growth.

Mr. Drabenstott: I'm afraid we will have to suspend our questions at that point. Join me in thanking Mario for his insightful analysis. We will turn now to Geoff Hewings for his perspectives on goals for new rural policies.

New Goals for New Rural Policies

Geoffrey J.D. Hewings

The Federal Reserve Bank of Kansas City is to be congratulated for seizing the initiative in developing a center directed at rural America; while rural issues, rural problems, and rural policies have been a persistent theme in the agenda of public policy initiatives throughout the last century, there is no doubt that the context for development has changed dramatically. It is no longer enough to consider new wine in old bottles as policy is reformulated but whether we should be in this particular wine business at all. Has the concept of rural America become something of an anachronism as we emerge into a new millennium with new economic imperatives, radically changing competitive pressures, and a renewed avocation for the practice of markets unfettered by intervention? In other words, is it time to place policies for rural America in the mausoleum of spatial *qua* regional policies based on nostalgia for intervention to prod economies in directions towards goals that reflected concerns for regional equity?

In this paper, I will address some of these challenges, reflect on (selective) past practice, and offer some conjectures in the direction of new innovations in the policy agenda. Were I writing this paper two years ago, my comments would not have been tempered by the reality of living part-time in rural America and seeing, at first-hand, why there are problems, why they are likely to persist, and why it is going to be so difficult to do something meaningful within a decidedly noninterventionist political era. However, the fact that I, a card-carrying metropolitan addict, spend any time at all in rural America offers some of the potential that may generate some potential for a newly formed development strategy. Having said this, I should caution that significant rethinking is going to be required; as a society, we are going to have to make some tough choices that will require us to place sentiment as one of many factors in the decision-making calculus. There needs to be an acceptance of the fact that not all is salvageable and that some difficult decisions are going to have to be made based on a new set of priorities.

REGIONAL SCIENCE AND RURAL AMERICA

While the regional science organizations have long espoused an interest in regional development, whether urban or rural, it is clear that the urban-orientation has come to dominate in terms of the contents of professional journals and presentations at regional, national, and international meetings. Our fascination with von Thünen never really materialized into a theory of rural regional structure that paralleled the developments in urban economic analysis. In the recent contribution by Fujita et al. (1999), the rural part of the spatial economic landscape interpreted by the *new* economic geography is decidedly uninteresting, undifferentiated, and playing only a bit part in the organization of activities. For example, agriculture prices may turn out to be important for sustaining primary city structures or generating the forces that create multiple city formation but there is little concern with what is going on in the rural part of this emerging landscape.

A second observation is that rural economic analysis seems to have become the recipient of the intellectual hand-me-downs; as new theory and models become received within the urban economic sphere, those that are displaced often find new life in rural applications. This is gross generalization and ignores the fact, for example, that the motivation for spatial price equilibrium models emanated from Iowa State and focused on agricultural commodity flows (see Takayama, 1996 for an enlightening exposition). In support, look at the use of formal models—economic base, input-output, social accounting—shift and share analysis and the stream of analysis that may be collected under the rubric growth-center/cluster analysis. In part, this transfer of methodology was conducted without metamorphosis to reflect different contexts, problems, or the dimensionality of the space in which the issues to be addressed were cast. We believed in the universality of the regional method, so if it worked in urban areas, ergo . . . .

A third stream of consciousness stems from regional theory, especially central place theory that while stressing the inherent duality between central places and their hinterlands, still brought a dominant, demand- (=urban) lead perspective to this synergy. Berry (1973) certainly cast this in perspective in examining centripetal versus centrifugal forces in spatial development (themes revived by Fujita et al. 1999).

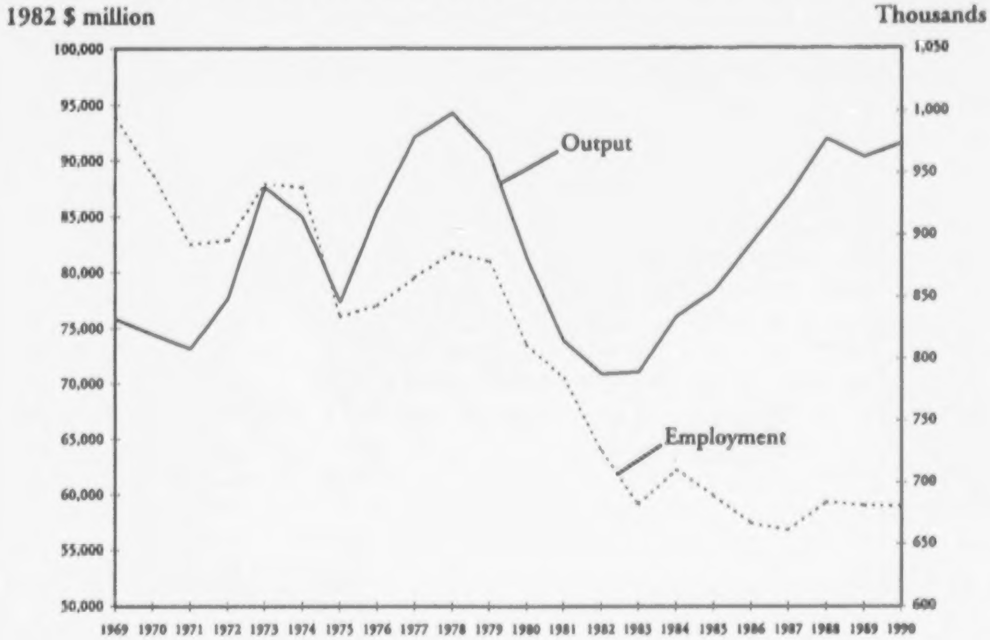
Then, of course, we have the infamous metropolitan deconcentration debate that occupied so much of the literature in the 1970s and 1980s. For the first time in decades, many areas of rural America experienced positive growth rates; talk of a turnaround persisted although authors such as Hansen (1976) remained unconvinced that the process was other than ephemeral (see the debate in the *International Regional Science Review* 1977).

What have we learned from metropolitan America to help understand rural America?

While one of my colleagues refers to the tyranny of taxonomy, it is clear that early work that attempted to differentiate metropolitan areas by their industrial structure, export market orientation, and growth rates was helpful in understanding commonalties and differences across geographic space. In recent years, the structural transformations in the economy as a whole have manifested themselves in a movement towards less specialization at the metropolitan level than was observed 20 or 30 years ago. Some surprising discoveries were made; for example, while the Midwest was being written off in the 1980s as manufacturing jobs disappeared, the enormous growth in nonmanufacturing employment almost went unnoticed. In fact, in Chicago, service employment dominated manufacturing employment some two years before the same event occurred for the nation as a whole. Further, while manufacturing employment declined, manufacturing output did not, generated in large part by enormous gains in productivity (Chart 1). There has been another subtle and only recently observed phenomenon that has furthered the tendency that has reduced differences in regional structure. Over the last 20 years, we have observed a phenomenon of ***hollowing out*** in the Chicago region, whereby the degree of intermediation has decreased (Chart 2). In essence, the average establishment is now dependent more on external sources of inputs and external-to-the-region markets; interstate trade has been growing enormously as reductions in transportation and transactions costs have made it possible for firms to concentrate production of specific products within one or two plants and ship these products to broadly separated markets. Thus, the structure of flows between and within regions has changed (Figure 1). The evidence for this is derived from observations based on commodity flow statistics; Chart 3 shows an index of trade overlap for the Midwest states. Values approaching one indicate that most trade is domi-

Chart 1

EMPLOYMENT AND OUTPUT, CHICAGO MANUFACTURING, 1969-90



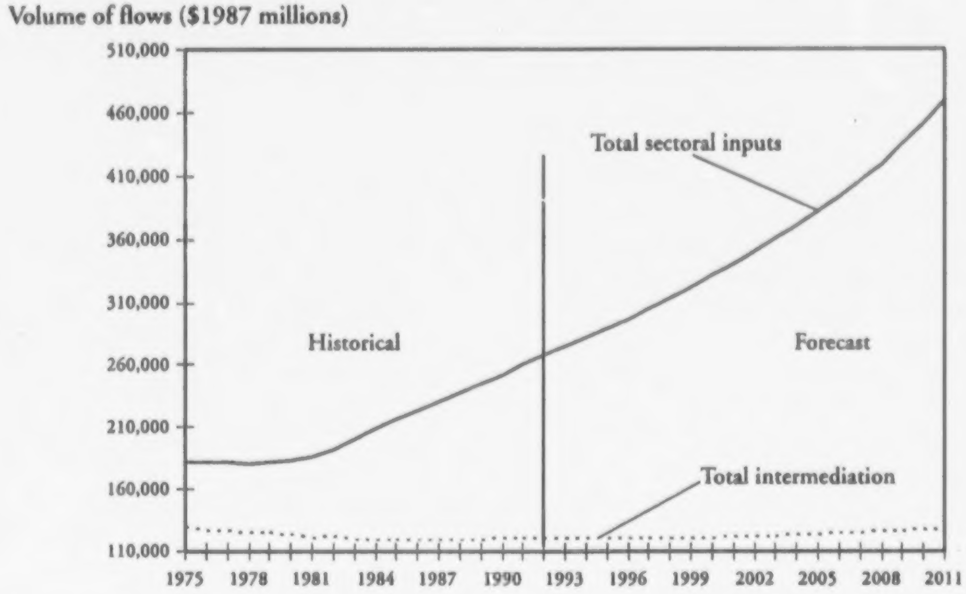
nated by intraindustry trade; indices approaching zero would indicate trade flow dominance by interindustry trade.

Here we have an interesting phenomenon—while the macro structure of metro areas (states) are becoming similar, the individual enterprises within constituent sectors are becoming more specialized. Given consumer demands for greater variety, given the evolving trends towards greater equality in per capita incomes across states, trade comes to be dominated by intraindustry flows.

One of the remaining differences in the structure of metropolitan economies is their orientation to export markets; while the volumes of exports and their percentage domination in any specific region's economy varies, the major difference may be found in the location of these markets. Some earlier work by Erickson and Hayward (1991) and Hayward and Erickson (1995) found rather important differences in the major markets for the West Coast (Asia), Midwest (Canada), and the East Coast (Europe); hence, market fluctuations in international economies will still generate a differential spatial impact on the metropolitan economies of the U.S.—directly, but the indirect effects remain undetected to date.

The most important questions for discussion of applications to rural America would be the degree to which this incredible transformation process took place with the help of policy intervention. Even fervent free market adherents will concede

Chart 2
RELATIONSHIP BETWEEN TOTAL SECTORAL OUTPUTS AND INTERMEDIATION, CHICAGO, 1975-2011

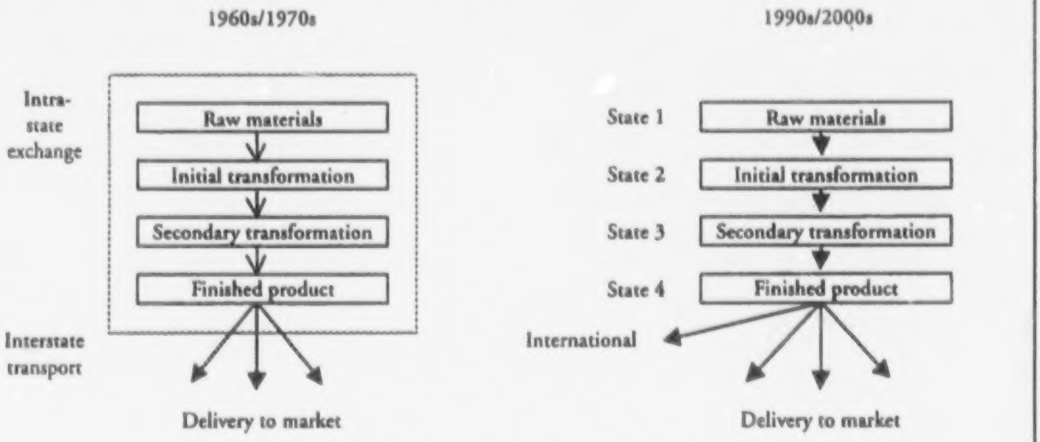


that investments in human capital (labor force training) and physical capital (especially transportation and communications networks) provided the necessary conditions for reorientation of economic activities. There is also considerable evidence (Bluestone and Harrison 1982) of the enormous problems that this transformation generated balanced against the significance of the gains, broadly defined (Testa et al. 1997). While spatial and skill mismatches in the labor market generated problems for many cities and parts of cities, policies oriented to the retention of inefficient industries quickly lost favor as communities realized that the long-run returns could not justify the investments. A journey through Pittsburgh, Cleveland, or Chicago will reveal very quickly the costs of this transformation, with many areas of the cities bereft of activity and with industrial landscapes that provide enormous challenges for redevelopment. In essence, perhaps we are witnessing an urban setting for Schumpeterian gales of creative destruction; in balance, have the costs been justified by the sustained benefits of the last decade and the potential for positive returns well into the next decade?

In generalizing, it is all too easy to sweep aside the enormous problems that arose and the problems that still remain. As we have uncovered in Chicago, there are still significant parts of the region in which underinvestment remains a problem. Our research uncovered the fact that the south side of Chicago, a predominantly African-American community generated income of almost $10 billion in wages and salaries, yet was significantly underserved by simple

Figure 1

CHANGES IN THE STRUCTURE OF INTRA- AND INTERREGIONAL TRANSACTIONS


1960s/1970s
1990s/2000s
Intra-state exchange
Raw materials
Initial transformation
Secondary transformation
Finished product
Interstate transport
Delivery to market
State 1
State 2
State 3
State 4
International
Raw materials
Initial transformation
Secondary transformation
Finished product
Delivery to market

retail facilities (Hewings 1999). Drawing these gaps to the attention of potential investors has generated some real opportunities that might have gone unnoticed—but it was the provision of information that provided the key. Community reinvestment programs have to be supported by a market system that will allow them to function; often, the former was available but the latter was absent, allowing prejudice and misinformation to deflect investment to other parts of the regional economy.

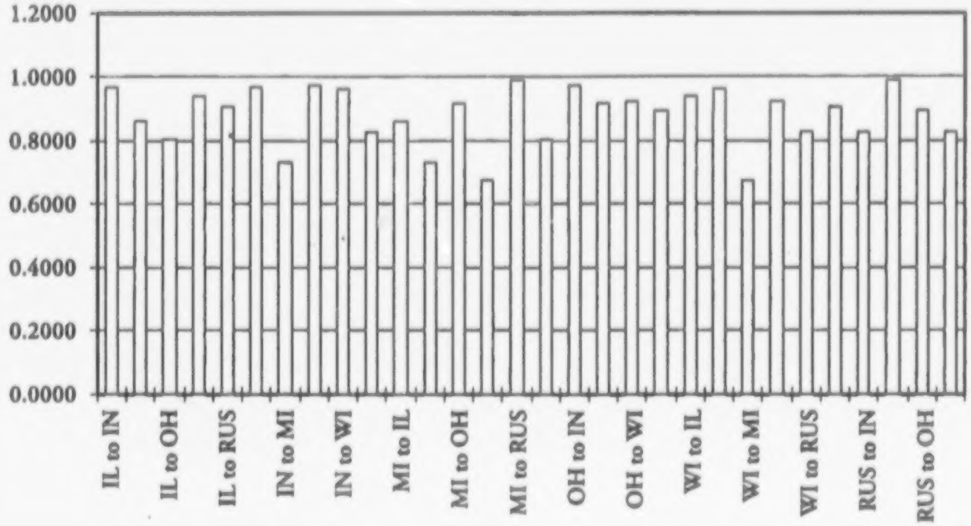
Let us pause here for a moment and reflect on what has happened in metropolitan America as a segue to a specific discussion of issues pertaining to rural America. Significant transformations have occurred, there have been enormous dislocations in the location of economic opportunities, but the metropolitan economies of the 2000s are leaner, more competitive, and able to absorb new challenges. This does not mean that there will not be additional dislocations—witness the attention in Chicago to the potential economic impact of electronic trading on the viability of the city's many exchanges—but policy as enacted now seems more market-oriented and being applied at least with a modicum of acknowledgment of the existence of the opportunity costs of investment.

New policies for rural America

In this section, some key issues will be visited, drawing on the metropolitan perspective; in essence the review suggests that while there is much to be learned from the urban experience, the context in which development proceeds in rural America may be sufficiently different to make transfer difficult. In fact, many of the reasons for failed policies of the past may be traced to the often naïve transfer of ideas and methodology from the urban to the rural context. Although the new economic geography has offered new insights for international trade theory, it has only sharpened and deepened received theories. At best, what one would hope is for a similar

Chart 3

INDICES OF TRADE OVERLAP BETWEEN MIDWEST STATES



Note: RUS stands for the rest of the states.
Source: Hewings et al. (1997)

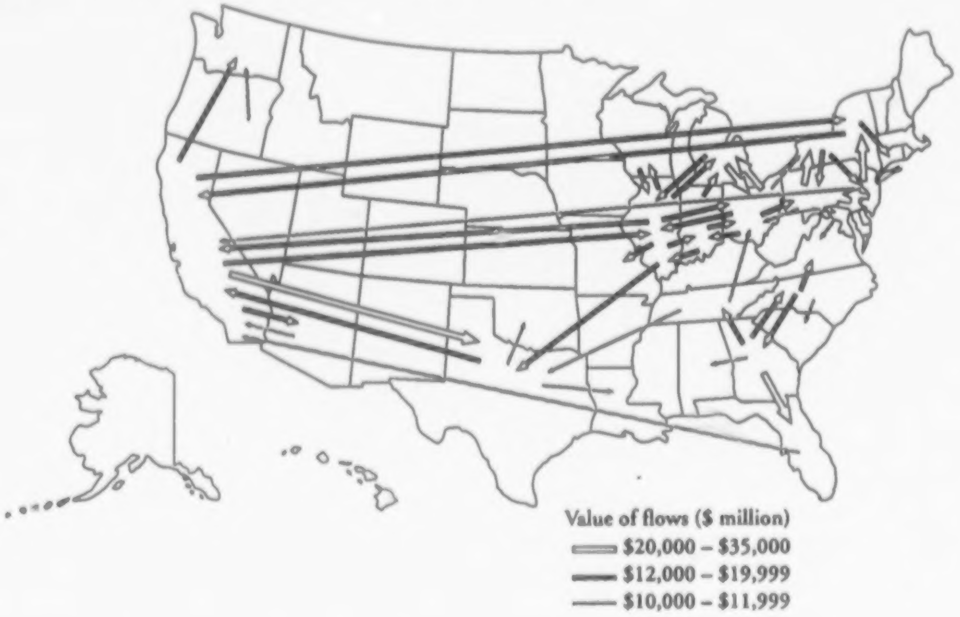
process in the transfer of the lessons from the more recent urban experiences to the rural context but not necessarily without significant modification and adaptation.

Transportation infrastructure. It was noted earlier that the hollowing-out process that has been so important in integrating the regions of metropolitan America has been based in large part on transportation improvements that have facilitated exchange, allowing firms to take advantage of scale economies and rewarding consumers with greater product variety at cheaper costs. Can we assume that similar investments in rural America will help propel a renaissance there? Of course, the distinction between the two geographies is artificial as much of the interstate transportation network connecting metropolitan American transects rural America.

A recent opportunity to participate in a panel evaluating a proposed significant investment in the waterway system of the Upper Mississippi and Illinois Waterways (UMIW) provided a valued insight into a segment of the problems affecting rural America. Based on a myopic view of demand growth (especially in international markets), claims were made for the limitations imposed on producers being able to access markets by virtue of high costs and inefficiencies on the UMIW system. Without entering the debate about the nature of transportation congestion on the UMIW system or the degree to which currently charged costs for water transportation reflect explicit and implicit

Figure 2

MAJOR INTERSTATE COMMODITY FLOWS, 1993



Source: U.S. Department of Commerce, Bureau of the Census, Commodity Flow Survey data, 1996

public subsidies, more pertinent questions would focus attention on the location of future markets for grain and other agricultural products and the alternative options that might be available for transporting these commodities to markets. Evidence assembled by Baumel (1999) would suggest that international markets for most grains (broadly defined) are unlikely to grow as competitors adopt U.S. farming practices, seeds, and market logistics; however, proponents for the transportation infrastructure investment also appealed to the economic development potential that would be generated by expansion of the system. When one examines the major commodity flow data, it is clear that (1) the UMIW system offers little competitive advantage and (2) projected increases in demand will probably continue to move east-west rather than north-south (Figure 2).

A second perspective was provided by an evaluation of air service to rural and small metropolitan economies. A number of analysts have pointed out that nonmetropolitan America needs to have access to the domestic air network if it is to remain competitive and to stand a chance of attracting new investment in economic activity. A comparison of a sample of communities with peers (most of whom did not have air service) revealed that there was no statistical evidence in support of an hypothesis that air service mattered in terms of employment growth in the counties in which the sample and the peers were located (Table 1).[1] Further analysis revealed

Table 1

GROWTH RATE DIFFERENCES BETWEEN EACH SAMPLE COMMUNITY AND ITS PEER, 1978-95

Sample County	Airport	Peer	Growth rate differences in total employment	Standardized growth rate differences in total employment
Tuscaloosa, AL	Tuscaloosa	New Hanover, NC*	-0.26	-0.79
Mohave, AZ	Bullhead City	Levy, FL	0.83	2.58
Yavapai, AZ	Prescott	Volusia, FL*	0.88	2.71
Garland, AR	Hot Springs	Moore, NC	-0.12	-0.36
Riverside, CA	Blythe	Ocean, NJ	0.31	0.97
Sonoma, CA	Santa Rosa	Santa Cruz, CA	0.13	0.41
Montezuma, CO	Cortez	Colfax, NM	0.47	1.45
Clarke, GA	Athens	Strafford, NH	0.02	0.06
Cerro Gordo, IA	Mason City	Webster, IA*	0.21	0.64
Wapello, IA	Ottumwa	McKean, PA	0.00	0.01
Barton, KS	Great Bend	Davison, SD	-0.21	-0.65
Shawnee, KS	Topeka	Lanscaster, NE*	-0.16	-0.49
Knox, ME	Rockland	Caledonia, VT	0.22	0.68
Alpena, MI	Alpena	Charlevoix, MI	-0.33	-1.02
Washington, MS	Greenville	Sumter, GA	-0.41	-1.26
Hill, MT	Havre	Toole, MT	0.05	0.16
Roosevelt, MT	Wolf Point	Phillips, MT	-0.17	-0.51
Box Butte, NE	Alliance	Franklin, WA*	-0.32	-0.98
Otero, NM	Alamogordo	Camanche, OK*	0.11	0.34
Ramsey, ND	Devils Lake	Stutsman, ND*	0.13	0.40
Williams, ND	Williston	Dawson, MT	0.28	0.86
Brookings, SD	Brookings	Holt, NE	0.37	1.13
Unitah, UT	Vernal	Lea, NM*	0.21	0.65
Rutland, VT	Rutland	La Crosse, WI*	-0.11	-0.33
Grant, WA	Ephrate/Moses Lake	Sutter, CA	-0.16	-0.48
Raleigh, WV	Beckley	Randolph, WV	-0.21	-0.64
Washakie, WY	Worland	Weston, WY	-0.13	-0.41

Note: * indicates presence of an airport with scheduled air service that many rural residents were bypassing local airports and traveling for up to two hours to reach hub airports to access a greater variety of destinations, cheaper fares, and to avoid propeller aircraft that were perceived to be less reliable, less comfortable, and less attractive (especially given the often high fares that were required to use them). In some communities, as much as 90 percent of the air travelers avoided using the local airport; "build it and they will use it" seems not to work in rural America.

Perhaps, we should reflect on the distinction that Fogel (1964) introduced in his analysis of the role of railroads on U.S. economic growth. He suggested that such investments have two distinct characteristics—embodied and disembodied. The latter could be likened to any investment that would yield similar returns, benefits, or transportation capacity, while the former provide specific returns that cannot easily be replicated in another form of investment. In the current context, the form of the transportation investment may be similar but the embodied characteristics are differentiated by geographic location; a freeway connecting two metropolitan centers will yield different benefits to the metropolitan centers than to the rural regions across which the freeway is laid. In some cases, the freeway may actually undermine economic activity in the rural regions by providing competitors in the urban area an opportunity to penetrate rural markets.

Hence, it is not that transportation infrastructure is not important to rural America; it is that the expectations associated with it are decidedly different and the transference of these urban-based responses to rural contexts is unrealistic. In many cases, improved transportation communications may undermine the often spatial monopolistic positions held by community-level retail facilities; concomitantly, internet banking opens up competition for rural banking operations.

Homogenous farming in an era of demand for choice and variety. We noted earlier that urban America has witnessed a bi-level transformation – moving towards greater macro diversification while specific sectors become more specialized. The terms Corn Belt, Wheat Belt, Dairy Belt, and so forth evoke images of agricultural regions in which product (or groups of products) homogeneity has become the dominant mode of operation. Am I suggesting a return to the past, wherein the practice, as on the 40 acres of rural America I jointly own, was oriented to raising cattle, sheep, poultry, pigs, fruit, a little corn, and perhaps oats or wheat? Not at all, since the market orientation has changed from one of self-sufficiency to serving external markets. However, it is clear that the monoculture of the Midwest and Plains that thrived for so long is now under serious threat. What can we learn from the urban experience?

Part of the problem is that food production still requires some basic inputs no matter how differentiated the final product. The omnipresent scale economies in production and transformation make it difficult to envisage a spatial organization that is much different from current practice. Two developments have been proposed. First, a greater attempt to increase value-added in production in rural America; as Baumel (1999) noted in Iowa, this process is well advanced with an increasing proportion of grain entering transformation within the state rather than export. This process will generate a larger number of jobs in rural areas, providing alternative sources of income for the farming community, although still based on a commodity chain of production (grains processing) that is narrowly focused. With cheaper shipping costs, it is now feasible to process more commodities nearer to the source of their production and then to export semi-finished or finished products to markets throughout the country or even throughout the world.

The second development suggests product diversification and the identification of niche crops; consumer demand for greater variety is not limited to automobiles, clothing, or entertainment but also to types of food consumed. The alarming statistics on obesity in this country would suggest that, as a nation, we could benefit from a reevaluation of what we grow and what we eat. The issue here is in estimating the size of these markets and just how much of current farm income could be replaced by alternative crops. My (very limited) experience suggests that many in farming focus on *gross* not *net* income and thus look at alternative crops in the context of filling available land rather than providing enhanced net income.[2] Other technological alternatives for the use of major Midwest crops, such as those being pioneered in the USDA laboratory in Peoria, Illinois, may offer alternatives that will seek to diversify the markets for the crops as an alternative to diversifying what is grown.

Exports from rural America. When the term exports is used in the context of an economy, the immediate implication is that these are international in nature. As has been noted, interstate exports are still much larger than international for any given region; yet little work has been undertaken to explore the external relationships of rural America in contrast to its urban counterpart. Far too often, attention is directed to the internal structure of parts of the rural economy and too little on the external connectivity. For example, who are the major trading partners of rural economies—each other, urban areas, or international locations? How generic are the patterns of trade and how stable are they likely to be over the next decade? By thinking more about rural America in terms of transactions and associated connections, greater insights may be gained into the nature of potential opportunities for development.

Analysis needs to be conducted to produce flows from rural America in a way that parallels the presentation shown in Figure 2. A more detailed analysis would then identify the major trading partners, provide insights into the nature of rural America's current and projected competitive advantage, and advance the process of thinking about this economy from a strategic trading point of view.

Globalization and services? Glasmeier and Howland (1995), while acknowledging research that points to the diversity of rural economies and the difficulties of generalizing, nevertheless claim that the growth of services has revealed a remarkably consistent pattern across rural economies. They distinguished between export-oriented services, indirect exports, and residentiary services in much the same way that the more familiar economic base model made similar distinctions for manufacturing; however, their diagnosis revealed little comparative advantage for rural communities vis-a-vis urban agglomerations. Their recommended strategies seemed to involve a mix of technical assistance, training assistance, capital subsidies, and better telecommunications. Notwithstanding the promotion of this mix of public policy responses, the authors note:

> ...for some services, the spatial division of labor model accurately places rural America in the position of being a way station between urban America and offshore production. With improvements in telecommunications and transportation technologies and the growing sophistication of American firms operating in international locations, rural areas can no longer count on receiving service jobs that might be capable of decentralizing to lower cost locations.

The authors suggest that rural America look to the newly industrialized countries of Asia for insights into appropriate strategies; however, this recommendation ignores the fact that most of the development in these economies is urban-based with access to a major international airport playing a critical role.

Investments in human capital. Two major developments have attracted some attention in recent years in the context of plant location decision-making. First, labor costs differentials are being viewed in a little more sophisticated fashion, with greater emphasis directed to differences in productivity. Secondly, shortages of highly skilled labor in both manufacturing and services sectors have focused attention on labor quality and the level of what may be referred to as *occupational capital* (the specific set of skills endowed in the labor force—see Israilevich et al. 1996). There is no doubt that the level of skills available in many rural communities provides little incentive for attraction of new activity; on the other hand, significant investment in skill training will provide only some of the necessary conditions to transform a community into a candidate location. While appeals to service activity in this post-industrial economy may appear attractive, the analysis provided by Glasmeier and Howland offers a very slim chance that this strategy will provide a key option for rural America.

Key actors approach—decision networks. In the late 1960s, the notions of key sectors, growth poles, and growth centers attracted considerable attention as mechanisms around which development strategy could be crafted, one built on what Hirschman (1958) referred to as unbalanced growth. The idea was to identify a small set of sectors whose growth would not only be above average but would also generate spillovers to the rest of the economy through the usual indirect and induced multiplier effects. In more recent years, this methodology has been reconstituted through appeal to cluster-based strategies; while the ideas are similar, the more recent efforts involve greater attention being directed not just to diagnosis but also to mobilization and action plans. Too often, key sectors or growth centers were identified in the hopes (expectations?) that this process would in and of itself create the mechanism for growth. In Illinois, communities vied for designation as growth centers by the state development agency since this economic benediction was felt to be rewarded with renewed activity. Of course, little new activity resulted.

The new cluster-based initiatives may not fare much better but there is one component that may prove to be attractive. Independently developed research by Burt (1992) among others on the role of social networks and more recent rural-oriented work by Kilkenny and Nalbarte (1999) on rural networks and keystone sectors offer more promise. The best way to summarize these approaches is to offer the perspective that the identification of economic potential will only serve to direct attention to communities in which there would appear to be some real options for development. Equally important is a parallel identification of the major actors and decision makers in the local community. Burt's (1992) work, while targeted to urban areas, has uncovered significant evidence of a correlation between the presence of social and economic networks; senior business leaders serving on public boards, charity organizations, and cultural institutions used these opportunities to network in a way that provided significant economic externalities to their own businesses. In essence, the social contacts may have precipitated economic liaisons that in turn fostered further social contacts. In an era of rapid turnover in CEOs, there is some concern about what this might mean for communities in which these close ties served so well to enhance economic development over the past decades.

Kilkenny and Nalbarte (1999) have explored parallel developments in rural communities; how do the agents interact with each other and which sets of agents or interactions (the keystone) can be considered vital to the community such that their removal would significantly undermine community structure? This work offers important potential because it involves building a locally generated network on top of the community typologies that are usually constructed from secondary data; it adds a new perspective to the claim that rural America is nonhomogenous by appealing to the role of significant agents as a differentiating factor and not merely the presence or absence of a specific economic sector.

Complementing this approach, and revisiting a theme introduced earlier, Weiler et al. (1999) have explored some case studies that focus on the role of information linkages, "key information," that might reduce the probability of market failures in economic development strategies. Their basic premise is that economic opportunities are often ignored or devalued because the quality of information available to evaluate them is incomplete. In their case studies, they propose an important role for local universities as sources of information and technical assistance – perhaps a broadening of the traditional roles played by county extension agents whose portfolio has often been limited to agricultural-based information and advice. The renewed interest in cooperatives (Egerstrom 1994; Zeuli and Freshwater 2000), but in newer guises with the potential for nonlocal ownership, may be another necessary complement to the enhancement of the way in which information is processed and opportunities exploited.

Nonhomogeneity of rural America. Taken together, these ideas suggest that a strategy that merges economic and noneconomic information in a more creative way might offer some heightened expectation for uncovering untapped potential in rural America. While we can agree with Glasmeier and Howland that certain forces are universally pervasive, the network/information research suggests that there are significant differences in the way in which market signals, structural change, and economic opportunities are viewed by major decision makers in rural America.

Hence, economic targeting is going to have to recognize a fundamental fact, namely, that there is unlikely to be one program that can address the myriad problems affecting rural America. The urban experience suggests that there has to be a recognition of the fact that some areas offer limited or no potential for economic development; given the very political economic nature of this problem, it is clear that spatially selective targeting is likely to be as popular as current movements in medical care to prioritize sets of ailments and cures and to recognize that not all procedures can be justified, given limited resources.

However, there will always be cases in which states will promote development or try to retain existing programs (e.g., North Carolina's recently proposed legislation to protect tobacco and Illinois' strong push for ethanol as an alternative use for grain products). The arguments here clearly transcend purely economic concerns and states and groups of individuals have every right to promote noneconomic arguments in favor of the retention of any activity. However, the opportunity costs of these decisions need to be made explicit so that informed choices can be made rather than choices based on appeals to social needs alone.

CONCLUSIONS

The basic question to be addressed is whether rural America is sustainable in its present form. As an increasing proportion of farm household income is being generated outside the farm gate, the suggestion could be made that market forces have already transformed this question into one in which the issue focuses on the size of the farm-based component of this income as we look ahead ten or 20 years. Will more and more of rural America become occupied by part-time residents whose economic roots are based in the growing urban economies? What can be sustained that retains a decidedly rural focus? Will many parts of rural America become living museums in which the activities are sustained only by the need to preserve a way of life as a link to the past but with limited expectation of this operation becoming self-supporting?

The lessons from urban America suggest that structural transformation is both painful and necessary; our hegemonic position in world agricultural commodity trade is eroding, and thus there is a need to explore alternative uses for what we can grow competitively, as well as alternative commodities. While we seem to have accepted, albeit reluctantly, that there are certain industrial commodities in which we have ceded comparative advantage to other countries, we appear reluctant to face the prospect of this happening in rural America. The technological advances that we pioneered in the post-World War II period are being adopted with increasing rapidity by our competitor markets. New waves of innovation, some new thinking, and an acceptance of the need to address these changes are called for; the process will be uncomfortable but necessary if much of rural America is not to become part of the set of "forgotten places" in the new global economy (Lyson and Falk 1993).

ENDNOTES

[1] Professor Andrew Isserman graciously provided the comparative analysis using his widely accepted methodology.

[2] Our tax accountant advised that another of his clients who had similarly ventured into rural America had found that growing shitake mushrooms for urban markets on some fallen oak trees yielded net income well in excess of soybean/corn/wheat rotations with virtually zero capital investment and daily labor inputs that rarely exceeded two hours!

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New Goals for New Rural Policies: Discussion

Moderator: Mark Drabenstott

Mr. Drabenstott: I have a sneaking suspicion that we have a lot more questions than we have time for, so we'll revert to our three-question format. We'll take three quick questions. Try to be concise in asking them, and we'll allow Mario and Geoff to answer them. We'll see how many of these we can work our way through. Again, please state your name and your affiliation.

Jim Scott, *University of Missouri:* I think there are several of our theories that are previously owned and burning a little oil. So, Geoff, I was wondering if you had any insights about how we might develop new theoretical directions for the study of rural America?

Julie Johnson, *South Dakota Rural Development Council:* Your comments about how we divide things in funny ways—we cut political boundaries or we put in programs based upon political boundaries reminds me that we're in a census year again. Census data tracts often define where things go in the rural Americas as well. Any thoughts about how we can get over these goofy boundaries that get in our way of defining and measuring real activity in the rural Americas?

Jim Caspary, *First National Bank of Clifton, IL:* Have you done any studies on how the tax relief that various communities offer in competition with other communities, have they really worked, or have they just created more competition at more cost?

Mr. Drabenstott: Three questions here. How do we get a new theory? An intriguing question about how do we create new political boundaries, especially in a Census year? And, should we pursue beggar-thy-neighbor policies? Geoff, let's start with you, and then maybe Mario has a comment about the political boundaries issue.

Mr. Hewings: Theoretical directions. In my paper I point out that this hand-me-down business is a gross generalization. I seem to be promoting Iowa State here, and they're not paying me, but I will anyway. Earl Heady and his group, in terms of special price equilibrium modeling, I think, provided the precursor of a whole generation of models now that are generally accepted. I think I would like to see a whole lot more work on trade and interconnections and much less on trying to estimate the value of a multiplier for a community. I think we can do that very well. I don't think we need to worry too much more about getting that down to the fifth or sixth decimal point. I think what is much more important is trying to understand how the rural communities that we are studying are integrated and interact and with which other parts of the country and with which other parts of the world could they interact, because I think then we will have a much better chance of trying to understand their competitive advantage. So models that I think that try to move in that direction will be much much more useful.

As far as the political boundaries problem, it's a question that I don't think anyone can offer any answer. Any boundary by its definition is going to create both problems and opportunities. And one advantage that we have now with geographically coded data: it's now possible for us to be more creative in putting data together in different ways. And sometimes we can transcend these boundaries, but often some of the complementary data that we need are not quite so flexible. So what is happening in this whole field of something called "spatial econometrics" now, which is trying to make very creative estimates when you have information in one set of regions, how can you transform that into another set of regions that you feel is much more appropriate? So those sort of developments are really taking place, and I think in the next four or five years, a lot of those algorithms will be user friendly and will be able to be used much more effectively by the general public. At the moment, they're still very very technical in their operation.

And the final comment is, I think the general sense is that these tax incentive programs are generally zero sum gains. The auditor general of the state of Illinois basically said that the evaluation that his office conducted showed that the rate of return was very rarely positive. A lot of times there were a lot of hidden things that went along with it that even the general public didn't know about. And that, in the final analysis, this wasn't a good thing. What I'm basically trying to argue by developing this analysis of the Midwest economy is that we're so interrelated with each other, we shouldn't be competing with each other; we should be complementary to each other. We should be delighted when Michigan gets a new automobile assembly plant because we're going to get a lot of jobs, and similarly, if we have something, they're going to get a lot of jobs. But, trying to get that through to the political process…I'm batting 0 for 100 on that one.

Mr. Drabenstott: Mario, your comments?

Mr. Pezzini: I happen to be a professor at Johns Hopkins in the United States, so I have some really nice words to say about this question. All that has gone on in the theory of technological innovation is very extremely interesting, much more than economies of scale and the way in which crude money is collaborating on this. However, the point is not technical, it is bull. What is interesting for me is another story. If you look at the trade of Venice five centuries ago, it probably was the same as what we have represented here. These areas used to be agricultural. They produced commodities. They sold all around the world. That's not new.

But, let me come back to a historian. Sometimes historians are better than we are. Brodell always said that there are three levels in the economy. One is that the world economy always existed. Then, there is a market economy that is the one assuring the production that you can trade, and most of the time this is done in small firms. And then, there is that everything is happening in the family—the materials civilization. Now, what is happening in the discussion about rural development—and, by the way, the discussion about clusters—is that finally economies discover that there are all these things called SMEs that are powerful in the economy, and not only the large corporations, and not only the four or five big groups in the world. These are the targets of policy; this must be it. Because the sense with the large corporations is that they should have the states, not the other way around. Now let me give you an example of what happened to me. I was staying in Mudernau, a factory. Mudernau is in a town in which is produced 40 percent of the Italian production of clothing, which, by the way, is the most important in the world. And Mudernau is supporting 40 percent of this production. This is done in a town that is called Carpi where there are 2,500 small firms, average size of four employees. No statistic in the world calculates what is happening at that level of size. Now, we're speaking about an economy that is able to provide Italy with a deficit of the gas that Italy doesn't take. So something that is enormous in power, that is competing with Benetton, that is competing with LaCoste, that is competing all over the world—this kind of economy needs to be targeted.

Now, I was very happy with Dr. Isserman yesterday and was joyful of his presentation. But, you are wrong! You are wrong criticizing the data that you criticized about ERS. I don't know if you are here now, because ERS has a big merit. They list as produced data what is happening in rural areas, and they permit us to start the discussion, because if not, we remain always the same. We discuss big flows, big firms, and we do not discuss what is the issue here: local development. The problem here is that with globalization and with these trade flows, we are also facing the appearance of growing poverty, growing disease that will be transformed into obstacles to trade—protectionism. This is, in my point of view, the big important problem.

Mr. Drabenstott: Let's take two quick questions and then we'll have our coffee break. Do we have two quick questions?

Karl Stauber, *Northwest Area Foundation:* In your discussion about regionalization, you've talked about urban-rural. But in 1992, most of the votes were cast in suburban districts—not in urban districts and not in rural districts. In 1994, the top five positions in the House, three Republicans and two Democrats, were all from suburban districts—no urban, no rural. With the 2000 Census and the 2003 reapportionment, probably half of the legislatures in the United States are going to be suburban-dominated legislatures. What does this mean for rural America and the kind of policies that you're talking about?

Mr. Drabenstott: One last question?

John Hays, *Farm Credit Administration:* I agree that rural America is not homogeneous at all. I've traveled around the U.S. with a previous job, and rural America in Georgia is different than rural America here, or rural America in the state of Washington. Can you come up with a comprehensive rural framework that can be adapted? My hometown has no amenities—at all.

Mr. Drabenstott: Is that your final answer? [Laughter]

Mr. Hays: That's why I no longer live there.

Mr. Drabenstott: That is your final answer.

Mr. Hays: Yes, three days in June, there is a rodeo. I don't think of the rodeo exactly as an amenity. But that is a problem because different state councils have to apply the attributes of an area based on what they have. But, could it be done in a single-policy framework or is it a multiple framework?

Mr. Drabenstott: Two good questions: the effects of the political dimension on our policy, and second, do we need one framework or more?

Mr. Hewings: Very good questions, and the opportunity cost of coffee is very high, so let me just address them very briefly. Karl, your question is a very good one. Let me go back to our analysis on the south side of Chicago. A large percentage—45 cents out of every $1.50—end up in suburban stores. I think part of the issue here is to get the nonrural part of America to understand why it is in their best interests to have investment take place there. And, it can be for economic reasons and it can be for other reasons. But, I think that just doing it on the basis that we think it would be good and it's important for equity reasons, I don't think that's going to fly anymore. I think we've got to appeal to people's self-interests. And, we can do it in a very creative way, and that would be my recommendation.

To John Hays' question, I don't think at this stage, we're anywhere near ready—at least I certainly don't feel ready—to develop a comprehensive framework. And what I hope is that the roundtable discussions that will follow this conference will help articulate those issues. But, it may be that your community may be one of those that we just can't offer very much hope for, and I think we have to have the courage to be able to say that.

Mr. Drabenstott: Mario, we'll give you the last word here in this session.

Mr. Pezzini: Well, the question of Mr. Stauber is of course…I ended my previous intervention to the agency he was directing before, and he brings me back saying we were good, but still, there is a new problem. I think this is a marriage of your attitude, always to identify new problems, and new issues that are on the agenda, or are not yet unfortunately on the agenda. I think that the one of suburban areas is one of these issues. It is a problem not common only to the United States, but to many other countries. The issue that you are posing is, what is the relationship between sense of belonging and sense of place? Now, these people in suburban areas are changing the perspective that we have had in the past. They are of course challenging our way of thinking, not only with economics, but also society. Both good issues to work on. I don't have an answer on any of these. Of course, it will affect the way in which we would do statistics—in which you suggested to do statistics.

On the rule of policy framework…I think that economists fortunately are not the only people who could give an answer. I think that in order to give an answer to this question, the best thing that we could do is to put together policymakers at all levels of government—national, local, regional—together with economists and start a period of thinking. Fortunately, there are experiments here and there. One of these is the leader project in the European Union, for example. Or, in Japan, some programs about amenities—protection and valorization. I think that looking at these experiments and building on them, we will be able one day to define a framework that is coherent for the development of rural areas.

Mr. Drabenstott: Please join me in thanking our morning panel. We will take our coffee break now and reconvene promptly at 10:30 a.m.

Overview Panel Comments

Jill Long Thompson

Well, thank you very much for that kind introduction, and it really is a pleasure for me to have an opportunity to spend some time with you today.

I think this is probably one of the most distinguished assemblages of folks that I've had an opportunity to spend some time with. And, after having had an opportunity, both yesterday and this morning, to talk with a number of you who have been able to participate throughout the conference, I am particularly impressed with what I am hearing about the dialogue that has taken place and the sharing of experiences and knowledge. Hopefully, in this final session, we'll be able to do some things to wrap up what has been occurring here at this conference, and more importantly, follow up as we go back to our respective jobs and respective communities to truly make some things happen.

I want to thank Mark for including me in this conference. It was interesting to talk with him this morning, both of us having grown up on farms in Indiana, knowing some of the same people back in Indiana and now across the country who are committed to rural development issues.

For those of you whom I have not had an opportunity to meet prior to this conference, I want to share with you that while I work in this job as Undersecretary of Agriculture, I continue to live in Indiana on a farm with my husband. We feel that it is very important for policy, whether it be federal or state or local, to take into account the importance of what takes place in rural communities.

This morning, I would like to talk about a couple of main issues and keep my remarks fairly short so that we have time to continue the dialogue that has begun here at this conference. But, there are two specific areas that I think are absolutely critical for rural communities to make the kind of progress that we need to in this next century. We've all been hearing, prior to this conference as well as at this conference, how the rural economy is going to continue to be dependent upon agriculture, and it's important for us to have policy that keeps agriculture as strong as it can be. But, at the same time, we have to recognize that much of the future growth and development in rural communities is going to come not only from areas related to agriculture, but also from areas that are not related to agriculture.

I would like to focus my remarks on a couple of things that I think are going to be important to production agriculture, to value added, to marketing of agriculture products, but also to other industry developing and growing in rural communities. First of all, it is very important for rural communities to be a part of strategic planning. That strategic planning has to take place at both the local and state levels.

At the Department of Agriculture, I have the responsibility for the administration of the Empowerment Zone/Enterprise Community initiative that a number of you are familiar with. It is an initiative that was begun by President Clinton and Vice President Gore. It's based on the foundation that communities that do well and continue to do well, even in times of economic downturn, do so because they strategically plan. The people in the communities themselves work together. You have Methodists who work with Catholics who work with Lutherans. You have Democrats who work with Republicans and with independents and other political groups. Unless you have that kind of working together and that strategic planning, you're not going to be able to move ahead.

In the Empowerment Zone/Enterprise Community initiative, one of the things that we have found that has been particularly gratifying is that even the communities that did not get an EZ or EC designation (that we then designated as champion communities and have continued to work with), those communities are growing and doing well and attracting funding not just from public sources, but also from the private sector. They are seeing economic growth occur, not because they have a formal relationship with the federal government, but because they are strategically planning. Their strategic planning is helping them to qualify for funding that comes from federal and state and private sources, from foundations, and so forth.

As I go around the country and talk with farmers and folks from rural communities, the one point that I make is that you really have to put your differences aside so that you can develop a strategic plan in the same way that a business does, where you set goals and you identify what you need to do to accomplish those goals in your community. Then, you all work together toward accomplishing those goals.

And, equally important to the strategic planning within the community is making sure that the strategy that you put in place ties in with the larger regional economy. You can't just isolate yourself from that larger geographic and economic community that you sit in the middle of and are a part of. So, the strategic planning has to include those types of things that affect your region, your state, and sometimes it involves crossing state lines. But, unless there is strategic planning using business approaches to development, you're simply not going to be able to move ahead and develop sustainability and growth for the long run.

In addition to the strategic planning, the second thing that I think is absolutely critical—and I know you've heard a lot about this at this conference because I've been following through reading the papers that were presented in earlier sessions—is we have to have high-speed Internet access for rural communities.

I came here to this conference from a trip with President Clinton to Whiteville, North Carolina, where he chaired a roundtable that included a number of people from the Whiteville area. There was a discussion of the significance of having high-speed Internet access for rural communities. By high-speed Internet access, I'm talking about affordable access. As we all know, even in those rural communities where you have access, oftentimes the cost is so much greater. And therefore, families and businesses that exist in the rural communities are at a distinct disadvantage in competing with businesses that are located in metropolitan areas.

This actually, I think, ties in with the whole issue of strategic planning. We have to make sure that in each of our rural communities that we represent and that we are a part of and working with, we have to make sure that we work toward the goal of achieving affordable high-speed Internet access. But, we also need to understand that it is not going to come just because we want it to and just because we work toward it at the local level. There also has to be a commitment at the state level.

I think that what North Carolina has been doing—and I don't know if you've had an opportunity to follow what Governor Hunt has been able to achieve in North Carolina—but the three major telephone companies have made a commitment to provide affordable high-speed Internet access to all citizens and all communities of North Carolina, and I believe it is over the next three-year period. We need, all of us in our respective states, states we work in or have responsibilities for at a national level, we all need to be working with individual states to make those kinds of arrangements and agreements with the providers of Internet access.

The real value of having high-speed Internet access is that it allows us to compress time and space, which in many respects is not unlike what the interstate highway system has done—or in my case, I remember when we got a paved road. My dad often talks about getting telephone and electric service. Those things really did compress space and time, but with high-speed Internet access, you actually collapse space and time.

We are at a very critical point in time. When I was in Whiteville, North Carolina, I had an opportunity to hear a presentation from a local farm supply dealer and his wife who had been dairy farmers. Then they went into this business of supplying chemical and fertilizers and seed and so forth. Their market does not consist of just Columbus County around Whiteville, North Carolina. It includes the entire country, and he talked about how by using the Internet he is able to attract customers from all across the United States, and he made the point that he had several customers from the state of Arkansas—President Clinton's home state, of course. That particular linkup allows business to grow and thrive and provide job opportunity and economic support in that community.

One of things that I have found, as I mentioned at the beginning of my remarks, is that I've continued to live on my farm in Indiana with my husband. One of the things that we have found is that we have fewer and fewer suppliers for running our farm operation. In many cases, where you have fairly large farms, the suppliers come from a distant place. If that distant place is a city, it helps the economic growth and sustainability of that city. But if it is in a rural community, then it helps rural America.

What I think we are going to see with the continued development of computer technology and Internet communications is new and different kinds of businesses coming into rural communities. We are going to see some businesses grow, some businesses not grow. But, what is most significant is not that a particular kind of business exists in a rural community—it is that there is that opportunity for businesses of many different types to grow and to be strong in rural communities. As we see certain suppliers and businesses go out of business in rural America, then with high-speed Internet access, we are able to attract new businesses and different kinds of businesses.

At the same time, some of those supply businesses that are strong and continue to be strong can appeal to markets outside the immediate geographic area of a particular county or a couple of counties. We have real opportunities, but we are only able to take advantage of those opportunities if we recognize that the next couple of years are going to be very, very critical because businesses are forming and developing as we speak. Because it is so critical in the next couple of years, it is very, very critical in the next several months for us to do everything that we can to ensure that rural America has high-speed Internet access immediately—not five years from now, not three years from now. It is an issue that we need to be working on right now to make it happen.

I go back to what I mentioned a couple of minutes ago, about how we all have had experiences (those of us who come from rural communities) of going from having a dirt road to a paved road. And we know what a difference that made when our road was paved and the next road over was paved. We also know what a difference it made when we got electrical service and when we had improved telecommunications service. All of those things that made a difference, that made it possible for those of us to do the kind of things we do today, we have to ensure that we are looking to the future to make sure that the children who are growing up in rural communities across the United States have the opportunities that we have worked to create for them.

I think back to my grandparents, and I have the privilege of owning my grandparents' farm in Indiana. If you looked at the farm, it really looks not all that different from when my grandparents lived there. It is the same house. It has a different roof, different siding. It has better electrical capability than when they first got electricity. It has a computer in it. It has a lot of appliances that were not even imagined when they lived there. But the most significant thing about the changes in that farm is the opportunity that exists for the people who live on that farm and the people that live on the neighboring farms.

So, when we talk about high-speed Internet access and the importance of having availability in rural communities—what it means to collapse time and space—we are not really talking about just high-speed Internet access. We are not just talking about collapsing time and space. We are talking about the opportunities that have to exist if rural communities are going to continue to be strong.

You know we just released a study on Wednesday, a joint study done by the USDA and the Department of Commerce. It is not surprising to anybody in this room and it wasn't surprising to me. We are lagging behind in rural communities when it comes to Internet access. But, we can do something about it and the way we are going to make it happen is through strategic planning, working together within the communities, setting our objectives, but also working together with our state government and federal government.

I think there is nothing we can't do in rural America, and I frankly think there's nothing we can't do in rural America and do it better. But, we have to make sure that we're using the same kinds of tools that are being used in urban and suburban America, and to make sure that we're creating opportunities for the kids who are growing up in rural America today.

This is a very distinguished group, and I think this is exactly the kind of conference that we need for all of us to go back to our respective jobs and communities and make things happen. I think that's going to happen as a result of this conference and I'm looking forward to working with you. Thank you.

Overview Panel Comments

Jesse White

Well, thank you very much, Mark. It is a pleasure to be with all of you today. It is a pleasure to be with my colleague from the administration, Jill Long Thompson, and Governor Olson and Commissioner Gonzales. Many are old friends.

First of all, I want to thank Mark for the introduction and thank him and his colleagues at the Fed simply for having a center on rural development. I think that this is so important and it is a beacon and a source of some encouragement and hope to all of us that this kind of commitment is being made here. And, I think it is important that we gather as people interested in rural development to see what the future looks like and perhaps how we can affect it.

I am somewhat reminded of the story of Justice Oliver Wendell Holmes, who in his late days, boarded the train in Washington and put his luggage up in the compartment. The young ticket conductor came by and asked for his ticket. Justice Holmes couldn't find his ticket.

The young man said, "Well sir, you have to have a ticket or I'll have to ask you to leave the train."

Judge Holmes pulled his briefcase down. About this time, the young man recognized him and said, "Oh, I'm sorry, Mr. Justice Holmes. I believe that you have a ticket."

Holmes persisted that he pull the suitcase down. The young man became mortified and said, "I'm going to the leave the chamber, sir. I'm really embarrassed about this."

Holmes said, "Young man, you don't understand. I don't know where in the hell I'm going."

So, I think we're here to figure out where we are going in rural America. A lot of that, of course, is informed by where we have been and where we have come from. I think rural America could be characterized as having moved from an era of independence—an era of small farms, farming communities, and businesses that serve them—to an era in which a lot of rural America has slipped into a status of dependence. The land was often bought up by outsiders; the coal mines in Appalachia were bought up by outsiders; we adopted particularly in the South and in Appalachia an economic development policy called Branch Plant Recruitment whereby we created jobs for our people by bringing in branch plants. Many of these efforts were successful.

As a result of this, we woke up after World War II and realized that we had created highly dependent and often structurally weak rural communities, communities that were really not in control of their destiny anymore. And, it seems to me, that a lot of our challenge lies in restoring self-sufficiency and restoring self-sustainability to rural America.

I want to thank my friend, Andy Isserman, for his plug yesterday. Andy says that he didn't even realize that I was in the audience, and I believe him on that.

I had forgotten about Andy's wonderfully droll sense of humor, as well. When I took over the ARC, before I was confirmed by the Senate, I went to a meeting just to see what it was like, and I heard this professor from West Virginia University present this Twin Counties study that Andy had done. Of course, I knew that the Commission had been struggling for its life for about 12 years. President Reagan tried to kill it eight years in a row, putting zero in the budget. I heard this rigorous study about how this had been a successful regional model. I was very heartened by that, but I was even more heartened when I found out that the ARC had not paid for it! It had been paid for by a National Science Foundation grant, and so therefore, no one could accuse Andy of having been on my nickel. As soon as I became federal co-chairman, I proceeded to put Andy on our nickel; and he did some great work for us as we developed a new strategic plan in celebration of our 30th anniversary.

We knew two things: 1) Rural America and Appalachia had changed since 1965 when we were created, and 2) the world had changed. The tectonic plates of economic life on which we had rested and built policy had shifted dramatically. And, Andy helped us, as our visiting scholar, think through what those implications were.

I'd also like to commend Mark and his colleagues on structuring the program. Because, it seems to me that by looking at human resource development, by looking at telecommunications, by looking at leadership and civic capacity, by looking at diversifying the economy, we are looking at the key issues facing rural America.

It's kind of interesting that in that strategic planning process, we came out with five key goals, what we call the five building blocks of sustainability in Appalachia. And those are: education and training, infrastructure, leadership and civic capacity, diversified local economies, and our historic commitment to health care. So, I think we are really on the same track, and I think the title of this conference is important. Although agriculture is important to rural development, rural development moved past that a long time ago. Picking up on what someone said yesterday, I don't know that we need a new department of rural development, but I would like to see the name of the department at least changed to the Department of Agriculture and Rural Development. It's called the Department of Housing and Urban Development, so maybe we should call this the Department of Agriculture and Rural Development. I do think that would send a message because it is only in the last eight or ten years that the policy circles have begun to understand that rural development issues are far beyond those of agriculture, and this failure to understand that has had serious consequences in many state capitols. In Washington, for example, rural development agencies are often handled by the agriculture committees on the Hill. I think we are lucky at the ARC that our authorizing committee and our appropriations committees have been public works.

I was very interested in Geoffrey Hewings' presentation and his trade patterns. If you looked at that map, you saw four areas that didn't have arrows on it. One was Appalachia, one was the Delta, one was the Colonias, and one was the Indian reservations. These are isolated, more rural areas. Although we've made tremendous progress in them, and Andy's research shows that we, in fact, have reduced the number of those distressed counties in half, we still have about 110. There's still not enough knowledge about trade flows and, in fact, you have the haunting suspicion that there are not enough trade flows going on.

I want to talk about what I think is a very innovative set of policies and programs that we at the ARC have to help rebuild self-sufficiency and sustainability. We're working on those five goal areas. We've spent a lot of money on infrastructure. We've spent about two-thirds of the ARC budget over the years on highways, water, and sewer. We're spending money on training. We're spending money on leadership development. But the regional initiative that we're involved in now is called Entrepreneurship. I think that is an important part of the puzzle because I think we've got to re-instill in rural America, particularly in Appalachia and the rural South, the idea that job creation, business creation, and most importantly, wealth creation, occurs as a result of local indigenous business creation.

The aim of our Entrepreneurship Initiative is to help and empower our own people to build their own businesses in their own communities. The Fortune 500 started in garages somewhere, and I want to see them start in the garages of Appalachia and rural America. But, we haven't given much thought to how public policy can enable that to happen.

So, we are in the middle of a three-year, $15 million initiative. The President has recommended doubling that in next year's budget, which I think is the most comprehensive approach to creating this new model of economic development in Appalachia and in rural America.

We think there are five building blocks to an entrepreneurial economy. One is better technical assistance to small business so that we can reduce the mortality rate. Second is better systems of transferring technology and innovation that may be occurring locally in your colleges and two-year colleges, and commercializing this activity locally so that you can create jobs locally. Third is getting more entrepreneurial education in the public schools—and Ray Marshall talked about the REAL program as one example—so that our kids are not raised only to work for somebody else; the entrepreneurial spirit can be put in them early. Fourth is creating better networks of services to small business people.

And fifth, and the one that I want to say a special word about, is capital—the lifeblood of small business creation. What we have found in Appalachia is that there is actually a generally adequate supply of debt capital in rural America, through banks, through revolving loan funds. But, what is missing is early-stage equity capital. So, what we're about at the ARC is helping to create—not capitalizing necessarily—but working with partners to help create six or eight developmental venture capital funds. These are venture capital funds that think and operate as venture capital, but they have a double bottom line. One is to keep the fund alive and make profits, but second is to promote economic development in the community. One of the models is the Kentucky Highlands Investment Corporation in London, Kentucky, which has done a great job with this.

Just last week, I was in Athens, Ohio, where David Wilhelm and some of his associates unveiled a $15 million Appalachian Ohio development venture capital fund. Lynn Gellerman is here. Lynn's involved in that fund. They got $2 million from Ohio University, six or eight banks to invest. And banks get CRA credit for this by the way, which is all right. So, this is going to make a big difference in Appalachian Ohio, in developmental venture capital, so that the equity piece is there for small business creation.

So, I think there's a lot of hope, a lot of creativity. I think what we need to do is rethink the model of economic development in a lot of rural America, and get about the business of restoring sustainability and self sufficiency to the great rural people of this country.

Overview Panel Comments

Allen I. Olson

All the presentations contributed to the core theme of this conference, New Policies for Rural America. Given the time limitations, however, I will react specifically to Professor Isserman's paper, in part, because I am attracted to the positive context of his analysis of the past and future of America's transition from a rural to an urban/suburban society.

He chooses to see the years 1950 to 2000 as less a stark rural-to-metropolitan transition than a more nebulous, less distinct transition that he characterizes as from rural to "formerly rural." This allows a more friendly projection of change for the years 2000 to 2050 as the present rural America adapts once again. If, however, population increase or density is seen as the *sine qua non* of prosperity, then the Great Plains region will lag.

There are historic, geographic, and political reasons that support such projection. This region was burdened by overpopulation from the "get-go." The agricultural potential of the region was oversold by railroad agents commissioned to settle this semiarid region by any means necessary. At the same time the 160-acre Homestead Act grant was simply insufficient in most cases to sustain the numbers of settlers attracted to the region. Over time, the lack of rainfall took its toll, particularly during the combined Dustbowl/Depression period of the "Dirty 30s" just prior to World War II.

Federal crop subsidies have supported the mainline agricultural economy of this region from post-World War II through the present "Freedom to Farm" period. But now that direct subsidies have ended, it appears a final population adjustment is in store as indicated by Isserman's 50-year projection. While population adjustment seems inevitable, it may not be a highly negative experience if the following thoughts play out.

It was fortunate coincidence, serendipity, or both: The week I had noted on my calendar to begin drafting some thoughts for participation on this panel to provide a conference overview also brought to my desk the Monday, April 10, 2000 *Wall Street Journal.* One of its three featured front-page articles that day not only dealt with the rural economic diversification theme of this national conference, but also the subject of the story was located in the state of North Dakota, where I served as Attorney General and Governor and formed most of my thinking on the complex and important issues of rural economic development. The colorful, captioned headlines to the article were:

Farmed Labor
A City-Slicker CEO
Finds Fun and Profit
At Home on the Range

Hal Rosenbluth Embraces
Marvels of North Dakota
And Spreads the Word

An Epiphany in Cow Dung

To those here who are veterans of efforts to diversify and expand the rural economy, particularly up and down the Great Plains states, telecommunications programs in abandoned storefronts on dusty Main Streets are nothing new. What's different about the North Dakota program is an established, successful national business leader, Hal Rosenbluth, taking such an extraordinary personal interest in the people and location of the programs. Another distinction is the validation of the work ethic culture of North Dakota and, by extension, the remainder of rural America which mirrors the North Dakota business environment as described by Rosenbluth. As he notes "...the relationships between farms, neighbors and towns" are "cutting edge" and the example for reorganizing his $4.5 billion travel company, Rosenbluth International, "...to be multifunctional and not have too many experts."

The Rosenbluth experience in North Dakota, this nation's most agricultural state, confirms that the rural economy is, in fact, beginning to change and diversify. While policymakers and politicians have been slow to acknowledge this budding transformation, agriculture production and related processing is no longer the only game in every town in rural America. But, at this point in time, the transformation is inconsistent and uncertain. My impression at the conclusion of this conference is a clear consensus that policies going forward should emphatically promote the consistency and certainty of this transformation.

As more nonagricultural economic activities begin to take root "out there," beyond urban and suburban America, a more accurate perception of contemporary agriculture—its "multifunctionality"—should be encouraged. Relatively new to the U.S. and Canada, the idea that agriculture is more than producing and processing food and fiber has been discussed in the European Union since the early 1990s. There, farming is now considered to have three main functions: 1) food and fiber, 2) environment and landscape, and 3) rural viability and balanced territorial development.

As subsidies are reduced/eliminated relative to "special interest" crops such as tobacco, sugar, and small grains grown on marginal land, use of this land will obviously change. Change will include options such as alternative crops, animal production, for-profit recreation or, in certain cases, reversion to its natural state where its aesthetic and public recreation potential will attract the attention of policymakers. As this change occurs, the multifunctionality of rural land and its use will become more apparent. Such a new understanding of rural land use together with continuing diversification of the rural economy, all of which has been touched on in various ways at this conference, will mark an auspicious first decade of the 21st century.

Overview Panel Comments

Javier M. Gonzales

My name is Javier Gonzales and I am a county commissioner from Santa Fe County, New Mexico. I also serve as the First Vice President with the National Association of Counties (NACo). It is an honor to be here today and to serve on this panel with such distinguished advocates for rural America.

Few people know that there is more to Santa Fe than the world-renowned tourist destination. Santa Fe County is 80 percent rural. Despite having a successful tourist destination nearby, our rural county residents still feel the crunch that much of rural America feels.

I grew up in Pojoaque, a small town north of Santa Fe. Pojoaque was settled by Spanish explorers decades before pilgrims landed on Plymouth Rock. The Spanish and Native American people in the area developed small farms with vast irrigation systems that raised chile, beans, and cattle. Descendants of those Spanish explorers and native people still farm those areas today. I often talk to those small farmers who tell about their difficulties in facing the new world economy.

I'm pleased that the Federal Reserve Bank has taken a lead in addressing the concerns of rural America. I think the conference has been educational to us all, and I will certainly have some new ideas to take back to the people of Santa Fe County.

I want to take just a minute to comment on some of the discussions we have had and also take a moment to promote my organization, the National Association of Counties, and talk a little about what we are doing.

Rural counties face a myriad of problems in today's world. Declining natural resource payments to counties, deteriorating infrastructure, lack of technological infrastructure, and a declining population (also known as "outmigration") threaten the fiscal integrity of these local governments throughout the country.

I really appreciate the comments made by Stephen Cornell from the University of Arizona on the importance of local-level capacity building and the development of both leadership and institutions at the local level. The economic success of some Indian nations described by Professor Cornell really points to the need for local solutions. Being a county elected official, I believe that to be true. NACo focuses on solutions that can be tailored to it local rural counties.

Each year, NACo develops a list of the priority items facing America's counties. Economic development continues to rank high on the priority list for NACo each year, particularly in rural areas.

As we heard earlier from William Fox, there is a question of priorities in rural America—whether infrastructure improvements lead to business growth or whether business growth generates infrastructure improvements. Surely that debate could go on for a while. But whether we decide that infrastructure improvements or business development need to happen, our nation's counties are poised to solve these issues at the local level.

We all know that the issues that face rural America are changing rapidly. I was looking at the 1996 proceedings of this conference and I noticed that rarely was technology, such as e-mail or the Internet, mentioned. It's amazing how much the issues have changed in four short years.

In regards to technology in rural America, their ability to keep up with their urban counterparts has not been happening as fast as it should.

A recent study conducted by the U.S. Department of Agriculture found that in rural America three kinds of business were prevalent: banks, grocery stores, and restaurants. Technological industries were barely a blip on the proverbial radar screen with only half of rural areas having basic computer stores.

Without the necessary technological infrastructure and a computer literate population, business will continue to bypass rural counties throughout this great nation. As Geoffrey Hewings noted in his presentation, changes in urban areas in response to the global economy have been difficult. But rest assured, it will be even more difficult for rural America to make necessary changes. But those changes have to happen.

NACo has undertaken several initiatives to more adequately address technology problems that plague rural counties.

NACo recently formed a Technology Task Force to examine how counties can move forward to fill some of the potholes along the information superhighway. Their findings are due in July 2000 and NACo will be advocating for legislation on Capitol Hill for deployment of either broadband or wireless technologies into these rural areas.

NACo has launched an ambitious set of programs aimed at improving the computer literacy throughout rural America. Through innovative public/private partnerships, NACo is on the forefront of this issue for America's counties.

For instance, we have noticed not only a "digital divide" within our county borders, but also an "e-mail divide" where only a small percentage of our county officials have e-mail addresses. In order to provide many of our 60,000 county officials with e-mail addresses and Internet access, NACo has teamed up with Juno Online services to provide these services free of charge to many of these areas that are in desperate need of electronic services.

NACo has also joined with America Online to start localized "Power up" projects. Through this partnership, AOL and other corporations will provide technology, funding, trained personnel, in-kind support, and other resources to help close the divide between counties who have access to computer-based information and technology-related skills and those who do not.

Another problem that our nation's rural counties face is access to affordable health care. The inability of a rural area to provide affordable health care to its citizens simply makes attracting business to their area even more difficult.

In hospitals throughout rural America, the doors are being closed or services cut back due to lack of resources. Congress can help these counties by increasing the reimbursement to Medicare payments to counties in this next fiscal budget cycle.

Many of the discussions we've been engaged in these last few days are going on elsewhere. NACo has formed a Rural Action Caucus comprised of nearly 1,000 rural counties to more adequately address many of the problems that I have mentioned here today to representatives and senators on Capitol Hill.

Working in concert with the newly rejuvenated Congressional Rural Caucus, which currently has a roster of one-quarter of the Congress, rural Americans can rest assured that we will be fighting on many fronts to ensure that the digital divide be closed forever and that affordable health care services return to rural America.

Thank you again for this opportunity to be with you here today, and I'm excited to move into a vigorous discussion of these and other issues today.

New Directions for Rural Policy: Closing Discussion

Moderator: Mark Drabenstott

Mr. Drabenstott: Well, we've had some provocative closing comments from our panelists. We now move to the last discussion period of the conference. This is your turn to discuss and pose questions about what you've heard throughout the conference. As in our previous sessions, we'll put these in groups of three and ask our panel to respond. Question one goes back to this corner.

Joe Dudick, *Rural Communities, Inc.:* Let me ask what to me is the big question. I think most of us, or I would hope most of us, would agree that rural America would benefit from a comprehensive and coordinated national rural policy that would take into account not only agriculture and traditional economic development, but all of the other factors that comprise a rural community. In the final analysis, however, such a process will be a political one. The first step in that is bringing together a coalition representing agriculture, commodities, and traditional economic development with housing, healthcare, transportation, telecommunications, and everything else. That would be a big job in itself. Then the issue of defining against the various levels of government the responsibilities for implementing the program, then to Congress where we have a whole range of committees and subcommittees that have jurisdiction over the programs that serve and benefit rural America. And finally, if we get it through Congress and get the President to sign it, we face the issue of a multitude of federal agencies, that in many cases have duplicative programs and agencies that don't talk to each other. My question to you is, what is your vision for the ability of us, and people like us, to put together a comprehensive rural development program that represents the widest range of issues, get it through Congress, and then get a federal administration to administer it in a positive way to serve the people of rural America?

Mr. Drabenstott: A formidable question. We'll take a question down front here—Tom Johnson and then Peter Decker.

Tom Johnson, *University of Missouri:* My question, a little bit of a comment, relates to Andy's formerly rural communities. It seems to me that a lot of those so-called successful communities are hiding some failure as well. That is, we have a system that says that if an urban community is successful it becomes more urban; if a rural community is successful, it becomes more urban. In other words, the things that are successful about rural often destroy the rurality. It seems to me that we need policies that not only solve the failure of the declining communities but also solve the failure of the growing communities as well. The question, I guess is, what are those policies?

Peter Decker, *Decker and Associates:* One of the defining characteristics of rural America, at least in the West, is the huge presence of the federal government as a landowner. In my county, for example, 60 percent of the landmass is owned by the federal government. They're also a large employer. Throughout all of the Western states, Southwest and Northwest, the percentage of land ownership varies considerably, but it is significant. My question is, having heard what we've all heard here in the last two days, is there anything that we could recommend or should do in the administration or particularly the actions of the federal government in rural America as they affect those counties where there is a large land presence of the federal government?

Mr. Drabenstott: Okay, three questions. The first one, how do we create a vision for a comprehensive policy? Second, how do we preserve the ruralness of our rural success stories? And third, what special role does the federal government have in Western states where it is a large landowner?

Who would like to go first? Undersecretary?

Ms. Long Thompson: With regard to the question of a comprehensive rural policy: Having served at the local level on a city council in a rural town located next to a large metropolitan area (Valparaiso, Indiana, outside of Chicago), having worked in the private sector on economic development, and then also having served in the Congress, and now in the Executive Branch, I think it would be very difficult for us as a nation to develop a comprehensive rural development policy that is very specific in its design. But I think that it is possible for us to do something that is very general that continues to provide flexibility for local communities, local governments, and state governments to make some of the more specific strategic and tactical decisions, and I think that is the smartest approach that we would be able to take.

With regard to preserving ruralness, that really is a problem. My husband and I, just about every weekend, complain about another house that has gone up in a field or a wooded area, and how many of the new folks in our neighborhood, who we like very much, don't have any understanding of what it's like to live in a rural community where you have your own well and you have your own septic system and you have maintenance of a home that goes well beyond what you have when you have access to city or town services. But, I think preserving ruralness is an issue that needs to be raised and awareness needs to be heightened as well. I think the role of the federal government is to make sure that there are funds available, that there's technical assistance available, and general assistance, but the decisions really need to remain local.

At USDA, because we have reorganized, I think we have done a much better job of partnering our resources with state and local resources, and we require rural development at each state to put together a strategic plan—not for the state, but for the role that we play in the state. Given the federal dollars that we have in the programs that we can administer, we work with the rural development councils, we work with the states, we work with local governments, we work with private sector organizations, chambers, and others to put together a strategic plan on how we are going to use our funds. And I think that that probably—where you have some coordinated but separate strategic planning—that probably leads to the best decisions because the federal government cannot make these very specific decisions for local communities. And if we did, you wouldn't get buy-in from the local communities as well. I think one of the reasons the EZ/EC (Empowerment Zones/ Enterprise Communities) initiative has been so successful is that the strategic planning takes place at the local level as a result of a directive from the federal government. So, I think the federal government's role needs to be much broader.

Mr. Olson: The realism of our country, in my view, is that comprehensive policies won't work unless they let the regions work it out for themselves. I think that the first region in this country that really has a leg up in rural development will be where a state really addresses the issues and decides to hold a constitutional convention, and restructure its government, which was built in the 1880s, or whenever that state came into the Union. The states went from being a territory to a state, and they had a constitutional convention, and they devised a state structure that was ideal for that time and place. We're now in the 21st century, and there are counties in the Great Plains and North Dakota with 1,000 people, and the greatest economic development there is the county courthouse. That isn't going to work anymore. But I understand, having been in the political barrel, how difficult it is to change. But I will to tell you that the first region where there's a state that takes that on will probably be the region that succeeds.

In my formal remarks, which I made in sort of a vacuum, I talked about multifunctionality, not of agriculture, but of land use. I recall as a kid on the Olson farm, in the middle of the Midwest flyway, that we were raising ducks and geese for the rest of the hunters in Minnesota. We had just swathed our grain and I can recall the ducks sounding like a freight train coming down the swathes. We were feeding ducks, especially after World War II. And when I was in public office and people said, "You know, we expect this and that and the other thing from rural America," I used to say in frustration, "We'll raise anything—we'll raise ducks—but pay us for it."

I think we're going to get there, and I understand that this is planning and all that stuff. And you get out West in West River country, a place that's hard to encourage, but I think it will become necessary as time passes. We can use land differently for different purposes, and there needs to be a recognition that there's a stewardship component to it, but it won't get done unless people get compensated or at least rewarded in some way for doing it. Particularly when I was in office, for us it was sort of the ebb and flow of federal landlord issues out West. North Dakota had grasslands but not the substantial acreage that other Western states had, and I appreciated that. But the fact is that it's going to be federal land forever. They're not going to turn it back. The Feds are going to react to different changing pressures and influences on the use of federal land. I would have to say this, and it sounds awfully callous, but, deal with it. You're going to have to and that use is going to change. It probably isn't going to be ranchland for much longer. It's going to be for some other kind of use. I think that's the reality of the future.

Mr. White: I guess I will just second what Jill and the governor just said. We will probably not have a comprehensive rural policy. I don't think we have a comprehensive urban policy. Like the governor said, we're such a complicated nation, and the federal government itself is so complicated that it would probably not be possible if it were desirable. And I'm not even sure that it would be desirable.

I would like to say something in response to what Ray Marshall said yesterday. And the drift of the question is that, while it is true that the Clinton Administration has not propounded a comprehensive rural policy, in fact this administration has been very supportive of programs that have helped distressed areas and that includes support for agencies like Economic Development Administration, Appalachian Regional Commission. We were actually reauthorized the year before last for the first time since Jimmy Carter was president. We had been living from year to year on appropriations language, which is a perilous existence. And also, I think Jill mentioned the EZ/EC. That would sort of be a nugget of the policy that the Clinton-Gore directed toward rural development.

In terms of failure and success in rural areas, certainly at the ARC, we measure that in terms of three aggregate indicators, which don't have a lot to do with having people live there, although we do look at migration statistics. But those are trying to reduce poverty rates, trying to reduce unemployment rates, and trying to increase the relative per capita market income vis-a-vis the country as a whole.

Mr. Gonzales: Just a comment on the presence of federal lands in the Western part of the United

States. It's a pretty contentious issue between counties and the federal government for a lot of reasons. Primarily the fact that the federal government has been promising to pay counties monies that are due to them, for things like forestries safety net funding, all of those things where they've continuously come up short in paying counties what the federal government owes them. And yet, they continue to increase their presence in the Western part of the United States. As in NACo, there's a cautious eye toward Washington when they want to take up more private lines. I agree with the governor in that they're going to be here to stay in the Western part of the states. All we can do from the local level is continue to advocate and, hopefully, receive from Congress what due to us in our fair share for having their presence in our communities.

Mr. Drabenstott: Let's take three more questions.

David Ward, *Wisconsin State Legislature:* We're talking about "Beyond Agriculture" and trying to redevelop rural America and trying to break down some of the barriers to developing rural America, but what role will large family farms play in the redevelopment of rural America? I think as we've been doing the work to try to attract rural development and new jobs to rural areas, we've created somewhat of a clash, as Mr. Johnson said yesterday from the "come here's" and the "from here's." I'd like the panel to comment on that.

Ron Wilson, *Huck Boyd Institute for Rural Development, Kansas State University:* This is a comment and a plea, so you can count it as a question or not, Mark, as you wish. I've been looking at your theme and reflecting on that—"Beyond Agriculture." I think another way to put it, as I see it, maybe would be "beyond monoculture," and I mean that in a couple of ways. Not that we're literally a monoculture, but in our part of the world for years we've been locked into producing the same old program crops. Now we have some risks and opportunities in that regard, and the kind of rural future that I envision and hope for is diversified, is entrepreneurial, is innovative, is value-added, is new generation cooperatives, and all those kinds of things that go beyond the same old program crops. So the policy framework like Freedom to Farm is actually very supportive of that type of notion. I hope that direction continues.

My plea is, I think, consistent with what the Undersecretary and others have said about strategic planning and local decision making. I think that's what it all boils down to. I would urge that the policy framework would be supportive and empowering of local leaders dealing with the circumstances and conditions that they face locally. One size does not fit all, so I suggest that the policy framework really is that the federal government should invest in education, should invest in research, should provide some tools, should encourage partnerships, and at some point, get out of the way and support and empower the local leaders and local decision makers in shaping their own future.

Ed Harshbarger, *Farm Credit Administration:* A previous question hit on one point that I had in mind. When I came to this program, I didn't expect to hear a lot about traditional farm policy, but I expected to hear something and we've heard very little. But, it seems to me that as far as rural economic development is concerned, government does have a role to play in the traditional farm programs, and certainly, Governor Olson, your part of the country has been a recipient of a good share of that, and I'd be interested to know what future contributions could be.

The second part, I guess, goes to Mr. Gonzales. Listening to your comments, it sounds like you're very interested in having programs available to support local community development. But, is there a role for policymakers to play in terms of some sort of triage, because we've heard that obviously not everybody's going to make it, and we certainly don't want to be throwing money at something that's dead.

Mr. Olson: You've heard the term "attrition." That's the triage. I think my hometown of Sarles, North Dakota—I describe its population as being the size of its average age—about 66. I'm really exaggerating its population. It's more like 45 and the average age is maybe more like 70. Sarles is gone. It's a goner. I can say that you'll go up and down the Great Plains and you'll find a Sarles in every one of those states. I think we just simply have to acknowledge it and the best way is to just let it happen. In part, I think it's because of part of what I talked about earlier. We raised expectations way too high initially 100 years ago, and we're still paying for it. Traditional farm policy—we stopped feeding the world sort of when Norman Borlaug left the University of Minnesota and started the Green Revolution, and yet we were told by everybody—politicians, big grain companies, and everything else—that we still had an obligation to feed the world, and we didn't. I'm a product of seeing conservation and letting the land go back to where it belonged. It wasn't meant to grow crops in a sense, but we did it. I probably went through college on Uncle Sam, indirectly. But, it's happened; it's done. Forget traditional farm policy. It's over with. I can't imagine in contemporary America that that's going to continue. Specialty crops, I think that's part of the answer. Large family farms, okay. My family, my cousins, myself, my dad ran about 3,000 acres of dryland wheat farm. That was a family farm; it was pretty big. I guess we should probably talk in terms of farm families instead of family farm. I'm nostalgic about it, but I'm also realistic. It will be tough for a seventh generation dairy farm in Wisconsin. I hope it happens.

Mr. Drabenstott: Jill, let's get your perspective on the role of farm policy and the future of rural America.

Ms. Long Thompson: I would like to precede my remarks by saying that this is not an official administration position. [Laughter]

Mr. Drabenstott: I think we all heard that.

Ms. Long Thompson: I believe there is a role for farm families and for family farms. I think it is very important to recognize a point that you made, or at least alluded to, which is that many large farms are family farms. I don't know how many of you read *The Farm Journal*. I think in this month's issue—I think it's April's—in Sonya Hilgren's editorial, she says we really need to determine how small, medium-sized, and large farms can all work together, and we need to move away from saying that large farms are corporate farms and therefore they're bad, because many large farms are family farms; in fact most of them are family operations. I believe that policy of the past has really hurt independent farmers, and the reason that I think that's the case is that we have discouraged through our policy farmers from working together and forming coops. We have a fairly large number of very successful coops in the Untied States, but we don't have nearly what we would have if our policy of the past had encouraged farmers to form coops, not just for value added, but also for the purpose of marketing. It is my belief that independent farmers that produce commodities in large quantities, like corn, soybeans, wheat, dairy—that we will never get a fair price so long as there are a couple million of us and a handful of processors and buyers, because you simply have a very unbalanced economic situation. We need them; they don't need us. Even if we farm 5,000 acres of corn, they can do without our 5,000 acres of corn. So, I think as we look to policy of the future, it has to be very market-oriented and it has to be international in scope. We have to draw an analysis between how we worked to establish rural electric systems and rural telephone systems with how we develop farm policy of the future.

We could have decided to subsidize rural families and businesses to buy electricity or generate it and transmit it by investor-owned utilities. Instead, we formed partnerships between the federal government and investor-owned coops. That is one of the most successful public-private partnerships in the history of the world. I think as we look to policy of the future, policy ought to be directed at encouraging your family farm, your dairy operation to work with other farmers for the purpose of determining the level of production that you need for a particular time, what to do with excess production, how to market it. In the dairy industry, we've actually had more success with coops than we have had in some other industries. A small model would be the Cherry Board that exists in the state of Michigan, for example. They take control in the private sector, but we the federal government work with them to do that.

Once we have a situation where farmers are marketing together, and also working across borders and working with producers in other countries as well—and there is some preliminary work in the dairy industry between us and Australia and New Zealand in the private sector, not by the government, but by the private sector—then I think we will have a more balanced or more level playing field. As we look to the policy of the future, we need to figure out ways that we can very cost effectively, in a very market-oriented way, encourage producers to operate as members of cooperatives where they take control and they can do many of the things that the Commodity Credit Corporation has done in the past. But, it would be a very market-oriented approach and it would provide greater balance in the economic structure.

Mr. Drabenstott: Let's take another round of questions.

Stan O'Brien, *Cessna Aircraft Co.:* I kind of feel a little out of my element with a group of people that I'm not used to being around, but I've found it extremely interesting the last two days. I appreciate you inviting us and letting us listen in. Some comments that have been made throughout the conference are the compression of time. Jill made those when she was talking to us a little bit earlier. I'm afraid that I have to admit to knowing when electricity came in. I was living on a farm in western Kansas when I stopped reading my books by coal oil lamp and started reading by light. We made catalog orders by telephone—our number was two longs and two shorts—and I've been around it, and I know how it was at that time. Putting our catalog orders in by telephone only took a couple of minutes, but it took a week to ten days to get the order out to us. I'm connected with the Internet now and, of course, I live in the city. It takes me about half as long to make the order, but also I get the order very quickly. I guess my question to the panel is, are we ever going to be satisfied in rural America until we can move people, products, and services in and out of the area as quickly? Interstate highways and the oiled roads don't do it. That's my question. Are we going to be satisfied until we can do that?

Mr. Drabenstott: Okay, a question about transportation.

Mark Edelman, *Iowa State University:* Mine is somewhat related. Infrastructure is important. Rural America has had a high reliance on property taxes in the past. As we look towards the needs of rural America in the future, what kinds of public financing mechanisms do you see? Are we going to have more from the state or federal government, with the decline in property tax and reliance on property taxes? What are the solutions in terms of where the dollars come from?

Ron Wirtz, *Federal Reserve Bank of Minneapolis:* This may be related to the last question. As it relates to the provision of telecom infrastructure in rural areas, are we talking about policy more like infrastructure like roads and sewers, or are we talking more like quasi-infrastructure like electricity and phones? And as it relates maybe to whether we agree or disagree that it's more like phones and electricity, to what extent do we need to revisit universal service?

Mr. Drabenstott: Three good questions. How important is the transportation infrastructure in moving not only bits and bytes, but products? How are we going to finance our public infrastructure? And what is going to be the tradeoff between a public or a quasi-public/private organization to those infrastructure investments?

Jesse, would you like to go first?

Mr. White: Well, infrastructure is traditional infrastructure, much less the new infrastructure, which is sort of access to international airports and telecommunications. The old traditional infrastructure is still very important to an area like Appalachia. One reason we came into existence is that the interstate highways had bypassed Appalachia. If you look at an interstate map from 1960, you see these gaping holes, and it was because it was expensive to build and the traffic counts weren't there. So, Congress authorized a 3,000-mile highway system, which we now have 80 percent completed. It's interesting, but it's the only highway system that was a developmental highway system, not based on existing traffic counts and needs but on prospective and the attempt to promote economic development. We did an assessment of that system a couple of years ago, and it's been a very cost-effective system to the nation in terms of jobs and wealth produced along that system. So yes, traditional infrastructure, getting products in and out of rural areas, is still essential.

Mr. Gonzales: Just a brief comment. I agree that the traditional and new infrastructure is absolutely essential to those of us in rural counties who want to take advantage of a new economy, while being able to hold onto our traditional economies. I'm a little skeptical about how much support that we'll get from the state and federal government in terms of helping us finance a lot of these infrastructure investments. I hope to be proven wrong. However, I am optimistic about public-private partnerships that exist, and the fact that there are private entities that understand the value of creating partnerships with public entities to develop our infrastructure so that we can see our own rural economies grow.

Mr. Olson: I waited until virtually the end of the conference to see if anybody else had the same reaction to the first question that was asked at the conference by the young student at Colorado State University, who said basically, "Who cares about rural America because all of the wealth is created in metro America?"

I thought, "My God, isn't somebody going to respond to that?"

That kid's reacting to the NASDAQ, Mid Cap, Large Cap, Small Cap paper wealth. The real wealth of this country still is outside the metropolitan areas—everything that we wear, everything we eat, and everything that houses us comes out of rural or formerly rural America. We need to get the attention of those kids some way. They are very influential because they have a lock on using technology right now. But, they are totally misguided on understanding what makes this country and this world tick.

I think all of these other questions about who is going to pay for it, Mark, unless we get those kids to understand that metropolitan America—the most efficient area where wealth is produced, or processed rather, or consumed—has to help out rural America where the real stuff comes from. Unless we win this battle for the hearts and minds of these young people who think that wealth is paper, what's out there isn't going to be very good.

Ms. Long Thompson: I would just ditto everything that I've just heard. I'm a little biased. I've been commuting from Indiana to Washington for 11 years, so I think I know firsthand coming from the farm, not only transporting things, but transporting people in and out. You can look at the statistics. I know Iowa State has some very good statistics on transportation. But, you can feel it personally whenever a major airline changes from providing major airline service to commuter service; you see a change in the patterns of which airlines people are flying in and out on; you see changes in what happens to a community. Rural communities must have physical transportation in and out and it has to be high-speed physical transportation in and out of our communities.

Mr. Drabenstott: With that, I'm going to let Undersecretary Thompson have the last word. I'm afraid we've run out of time for questions. I would like you all to join me in thanking our distinguished panel for their remarks. It's now my pleasure to reintroduce our bank president, Tom Hoenig, who has some conference closing remarks.

Mr. Hoenig: Well, it's been an interesting couple of days. I want to thank each of you for taking your valuable time in joining us. It's been very worthwhile for me.

I also want to thank each of our panelists and speakers, those here today and those of yesterday. Your contributions have been enormous. I'd like to point out too that, like the governor, I have attended many conferences over the years, like many of you. And as far as holding my attention and engaging me, I have yet to attend any conference quite as engaging as this has been. It's just been a pleasure for me. I want to specifically thank Mark Drabenstott for truly organizing this and bringing you together, and Alan Barkema and Larry Meeker, in joining him in doing that, and our staff. I get a lot of credit for this and deserve none of it. I want to acknowledge that right now to you. It's these other individuals that make this work.

But, there is one thing that I do want to say. I started the conference yesterday by referring to a metaphor. Rural America is part of the economic fabric. And I think it's a very apt metaphor because if any part of the fabric tears, the bolt of fabric is far less valuable to us. Rural America, as has been pointed out, is such an important part of this fabric in holding it together and making it strong. As a Reserve Bank president, located in this part of the country, and from this part of the country, I am very committed to the economy generally, and to rural America specifically.

I'm not going to try to synthesize this conference, but you all have your opinions. But, I do want to point out a couple of things. If we take nothing else away from this, as we go into a number of the roundtables that we spoke of, I think we know that we really are working together with a community of interests in rural America. It is resource management, it is agriculture, it is the need to continue to build infrastructure and technology and housing. It isn't just one sector in need. It is this community of interest that has to come together under that leadership. And I am absolutely confident that there's nothing but a bright future for rural America if in fact we do those things. And we take pride in the fact that we have so much to offer.

So it is that that I think we should take away from this conference, and I invite you to join us in the roundtables that we will have over the next several months. And we should be even more prepared, I hope, to come back here again next year, on April 30 and May 1, to talk about new policy options for rural America, based on this foundation and what we develop going forward. I think it will be a great conference, too.

I think we have made significant progress just by recognizing things today. I have thoroughly enjoyed it. Thank you all very much for joining us. Good day.

Contributors

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Alan Barkema is a vice president and economist in the Center for the Study of Rural America. Dr. Barkema joined the bank as an economist in the Economic Research Department in 1986. He recently served a three-year term as professor and head of the Agricultural Economics Department at Oklahoma State University before returning to the bank last summer. His research has explored the impact of national and international developments on the agricultural and rural economies as well as a broad range of issues spanning the food industry, international trade, and agricultural finance and policy.

STEPHEN CORNELL, *Director, Udall Center for Studies in Public Policy, University of Arizona*

Stephen Cornell is director of the Udall Center for Studies in Public Policy, an organization that sponsors policy-relevant research and forums that link scholarship and education with decision making. The Center specializes in issues concerning natural resources, American Indians, and the U.S.-Mexico border. Dr. Cornell is also a professor of sociology and of public administration and policy at the University of Arizona. Dr. Cornell's experience prior to joining the Center includes serving as the chair of the department of sociology at the University of California, San Diego and as a professor at Harvard University. He is co-founder and co-director of the Harvard Project on American Indian Economic Development, a research program headquartered at the Kennedy School of Government at Harvard University.

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Mark Drabenstott is vice president and director of the Center for the Study of Rural America. He is the chair of the National Planning Association's Food and Agriculture Committee and is director of the National Bureau of Economic Research at Harvard University. He is the author of more than 100 articles on topics such as farm policy, agricultural trade, rural and economic development, and the food industry. Dr. Drabenstott is a frequent speaker before industry, university, and public policy audiences throughout the nation. On more than ten occasions, he has testified before Congress on rural and agricultural policy issues, while also advising the World Bank and other international organizations.

WILLIAM F. FOX, *Professor of Economics, University of Tennessee*

William F. Fox is professor of economics at the University of Tennessee and is director in the Center for Business and Economic Research (CBER). Dr. Fox is a former president of the National Tax Association and has held appointments as a visiting scholar at the Federal Reserve Bank of Kansas City and as a visiting professor at the University of Hawaii. He has served as a consultant in approximately 20 countries and ten states.

Currently, Dr. Fox's research focuses on the relationship between public policy and regional growth and on designing appropriate tax policies for rapidly emerging industries. He is frequently invited to speak to legislative committees, national and international businesses, government and academic organizations.

JAVIER M. GONZALES, *County Commissioner, Santa Fe, New Mexico*

Javier M. Gonzales is the Santa Fe county commissioner and the first vice president of the National Association of Counties (NACo). As a member of the Santa Fe County Board and NACo's leadership team, he has taken a strong interest in helping counties address the challenges associated with such pressing issues as public safety, economic development, and health care. Mr. Gonzales co-founded La Voz Broadcasting, Inc., New Mexico's largest Spanish language radio station, in the early 1990s and serves as the corporation's chief financial officer. He has served on the New Mexico Association of Counties' Executive Committee. Other high-profile positions include president of the National Association of Hispanic County officials and board member of NACo's Deferred Compensation Advisory Compensation Committee.

ALAN GREENSPAN, *Chairman, Board of Governors of the Federal Reserve System*

Alan Greenspan was recently appointed to his fourth four-year term as chairman of the Federal Reserve Board of Governors. Previously, he was chairman and president of the New York consulting firm of Townsend-Greenspan and Co., chairman of President Ford's Council of Economic Advisers, chairman of the National Commission on Social Security Reform, and a member of President Reagan's Economic Policy Advisory Board. He was also senior adviser to the Brookings Institution's Panel on Economic Activity, consultant to the Congressional Budget Office, and president of the National Association of Business Economists.

GEOFFREY J.D. HEWINGS, *Professor of Geography and of Urban and Regional Planning, University of Illinois*

Since 1974, Geoffrey J.D. Hewings has been a professor of geography and regional science, of economics, and of urban and regional planning at the University of Illinois. He is the principal affiliate scientist in the Illinois State Water Survey. Dr. Hewings' research interests center on the development and applications of urban, regional, and interregional economic models under conditions of limited information, with an emphasis on input-output, social accounting and general equilibrium models. He is the president-elect of Regional Science Association International and, prior to this position, served for nearly 20 years as the organization's executive director. Dr. Hewings is also the director of the Regional Economics Applications Laboratory, a cooperative venture between the University of Illinois and the Federal Reserve Bank of Chicago.

THOMAS M. HOENIG, *President, Federal Reserve Bank of Kansas City*

Thomas M. Hoenig is president and chief executive officer of the Federal Reserve Bank of Kansas City and a member of the Federal Open Market Committee. He joined the bank in 1973 as an economist and assumed the role of president in October 1991. He directs Federal Reserve activities in the seven-state Tenth Federal Reserve District—an area that includes Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New

Mexico, and western Missouri. Dr. Hoenig is a member of the board of directors of the University of Missouri-Kansas City, and board chairman of Benedictine College. He is a trustee of the Midwest Research Institute and a member of the banking advisory boards at the University of Missouri-Kansas City and University of Missouri-Columbia.

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Andrew M. Isserman is professor of rural economic development at the University of Illinois, Urbana, jointly appointed in Agricultural and Consumer Economics and Urban and Regional Planning. He currently coordinates a large multidisciplinary study of the social, economic, and policy dimensions of agricultural biotechnology. His research has been funded by grants from the National Science Foundation, as well as by the U.S. Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Housing and Urban Development, Interior, and Transportation, among others. He is editor of the ***International Regional Science Review*** and has been a Senior Fellow of the Public Policy Institute of California, Whisman Scholar of the Appalachian Regional Commission, and Research Fellow of the American Statistical Association. He has written extensively on methods for studying economic and demographic change and related public policy issues.

MARTIN C. JISCHKE, *President, Iowa State University*

Since 1991, Martin C. Jischke has been the president of Iowa State University. Before joining Iowa State University, he served as the president of the University of Missouri-Rolla for five years. Dr. Jischke has a background in aeronautics and astronautics and has served research fellowships with NASA and the Donald W. Douglas Laboratory. From 1975 to 1976, he served as a White House Fellow and Special Assistant to the Secretary of Transportation. In 1993, he received the Centennial Medallion from the American Society of Engineering Education. Dr. Jischke serves on a number of boards, including the National Association of State Universities and Land-Grant Colleges (NASULGC), the American Council on Education, Kerr-McGee Corporation, Bankers Trust Company, and the newly created Global Consortium for Higher Education and Research in Agriculture.

THOMAS G. JOHNSON, *Frank Miller Professor of Agricultural Economics, University of Missouri*

Thomas G. Johnson is the Frank Miller Professor of Agricultural Economics and the director of the Community Policy Analysis Center at the University of Missouri. Dr. Johnson's research areas include rural economic development, fiscal and economic impact analysis, local government finance, and transportation economics. He is currently a co-investigator with faculty at the University of Ulster on the Show-Me Project, which is developing community decision support systems for rural communities in Northern Ireland and the Republic of Ireland. Dr. Johnson has served on a number of state and national committees and task forces. His experience includes serving as a consultant to the U.S. Economic Development Administration, the U.S. Department of Agriculture, the National Governors' Association, the Government Finance Officers' Association, the Council of State Governments, and the governments of Canada, Ireland, and the Czech Republic. He has served on two editorial boards and has published two books and more than 100 articles and chapters.

TERRY JORDE, *President and Chief Executive Officer, CountryBank USA*

Terry Jorde is the president and chief executive officer of CountryBank USA. She began her career in 1979, at Towner County State in Cando, North Dakota, and became the bank's first female president and chief executive officer in 1990. In 1998, Towner County State Bank changed its name to CountryBank USA. Ms. Jorde is currently chairman of the Community Banking Network, the parent company for the Independent Community Bankers Association's (ICBAs) for profit subsidiaries. In her community, Ms. Jorde is a business development leader, serving on the board of directors for the Durum Triangle Economic Development Corporation and the Towner County Medical Center, and as chairman of the Cando Community Development Board. Her leadership experience includes serving as a member of the Consumer Advisory Council, as the first female member of the ICBA's Executive Committee, as chairman of the ICBA's Agriculture-Rural America committee, and as president of the Independent Community Bankers of North Dakota.

JILL LONG THOMPSON, *Under Secretary of Agriculture for Rural Development, U.S. Department of Agriculture*

Jill Long Thompson is the Under Secretary for Rural Development at the U.S. Department of Agriculture (USDA). Among other responsibilities, she chairs the Multiple Agency Command that coordinates federal agencies' work on President Clinton's Pacific Northwest Adjustment Initiative. Ms. Long Thompson previously served six years in the U.S. House of Representatives, where she was appointed to the House Agriculture Committee and served as vice chair of the Environment, Credit, and Rural Development Subcommittee, and as chair of the Congressional Rural Caucus. Her experience includes serving as a Fellow at the Institute of Politics in the John F. Kennedy School of Government at Harvard University. Before her election to Congress, she was an assistant professor of Business Administration at Valparaiso University and an adjunct professor at Indiana University-Purdue University at Fort Wayne. She currently serves on the board of directors for the Commodity Credit Corporation, the National Sheep Industry Improvement Center, and the USDA Graduate School.

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Allen I. Olson is the president and chief executive officer of the Independent Community Bankers of Minnesota. Mr. Olson has been admitted to the practice of law in the states of North Dakota and Minnesota, the Federal District Court of North Dakota, United States Military Appeals, and the United States Supreme Court. He has served as the appellate and trial counsel for the United States Army Judge Advocate General's Corps (1963-67), the attorney general for North Dakota (1972-80) and the governor of North Dakota (1980-84). Mr. Olson currently serves on the board of directors for Allina Health System, as chairman of the board of directors for the Red River Trade Council, Inc., and as board trustee for the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools.

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Mario Pezzini is the head of the OECD's Regional and Rural Development Programme. His primary fields of interest include regional, industrial, and labor economics. His background includes working as a senior economist at Nomisma Spa (an economic research organization) in Bologna, Italy; economic counselor in regional planning and development for the Regional Government of Emilia-Romagna; and professor of industrial economics in Ecole Nationale Supérieure des Mines de Paris.